

COLLECTANEA

SIR PETER EADE.

Wyalgo

COLLECTANEA

DE DIVERSIS REBUS

ADDRESSES & PAPERS

BY

SIR PETER EADE, M.D., LOND.

*Fellow of the Royal College of Physicians; Hon. Fellow of King's
College, London; Consulting Physician to the Norfolk and Norwich
Hospital, to the Fenny Lind Infirmary for Sick Children, and
to the Norwich Dispensary; Honorary Freeman of
the City of Norwich*

LONDON

JARROLD & SONS, 10 & 11, WARWICK LANE, E.C.

All Rights Reserved

1908

STA CURE

ROYAL CANADIAN MOUNTED POLICE	
CLASS	
CLASS	C 08 EAD
NO.	6390
NO.	6-3-57 PHJ-
DATE	6-3-57

CONTENTS.

CHAPTER	PAGE
I. ON RECREATION GROUNDS FOR NORWICH -	9
II. ON TEMPERANCE AND AIDS TO TEMPERANCE	15
III. ON TORTOISES— <i>With Illustration</i> , 1908 -	29
IV. A FURTHER NOTE UPON TORTOISES -	38
V. MY CHRISTMAS GARDEN PARTY - -	44
VI. MY CITY GARDEN IN "A CITY OF GARDENS"	53
VII. PRESIDENTIAL ADDRESS TO THE NORFOLK AND NORWICH NATURALISTS' SOCIETY -	72
VIII ON ST. GILES'S CHURCH AND PARISH, NORWICH - - -	90
IX. THE TOWER OF ST. GILES'S CHURCH— <i>With Illustration</i> - - -	99
X. ON SIR THOMAS BROWNE— <i>With Portrait</i> -	121



Digitized by the Internet Archive
in 2015

<https://archive.org/details/b24974973>

PREFACE.

THE following Addresses and Papers on various subjects have been selected from many others contributed by the Author, as thought to be possibly of sufficient interest in their respective spheres to justify their reproduction in a collected form. They are very diverse in their character, and embrace a great variety of topics.

It has been well said that all men are delighted to look back ; and the Author, whilst thus recalling past work, can only express the hope that some of these Papers may have contributed, however infinitesimally, each in their own way and at their respective times, to help forward the appreciation of the then present, or the progress of the world's welfare or knowledge in the future.

Norwich, 1908.

I.

PROPOSED PROVISION OF RECREATION GROUNDS FOR NORWICH.

Condensed Report of Speech in Norwich Town Council, 1880, reprinted from the *Norwich Mercury* of October 23rd, 1880 :—

Dr. Eade, pursuant to notice, rose to call attention to the question of recreation or playgrounds for the children of Norwich.

HE reminded the Council that four or five years ago, after some considerable talk with leading citizens, he ventured in the public Press to call attention to the deficiency which existed in Norwich in respect of recreation or playgrounds, and also of public baths. Ever since that time the question had, more or less, started up at intervals, while certain steps had been taken, which, in the course of time, would probably result in something being achieved. But, as time went on, the city was growing rapidly, open spaces were built upon, and he and those who were anxious to see something done were passing away. He had, therefore, taken upon himself once again to call attention to the subject, and to ask the Council to take action upon it.

After remarking upon the great importance now generally attached to questions affecting the public health, sanitation, or preventive medicine—for these were synonymous terms—and the intimate connection

now everywhere recognised between the general welfare of the population of our great cities, and the absence of disease, with the consequent reduction in the death-rate, Dr. Eade said that it was entirely from the point of view of the public health that he wished to call attention to this subject. The physical growth, the physical well-being, and the physical development of the population formed a large branch of this subject; and he was afraid that, with regard to this, Norwich could not be said to be in the forefront of progress. Even since he first mooted the question many of the open spaces which he then believed available for the purpose had been built over or otherwise dealt with.

Norwich, once a city of gardens, was rapidly becoming a cramped and overcrowded city—at least, in its older portions; and in the new portions no provision was made for the physical welfare of the population, and no opportunities were given for the physical development of the children. Not in a single instance had a good wide roadway been opened up in the new districts; on the contrary, he was sorry to see in one or two of the most populous districts roads which ought to be great, wide thoroughfares, nothing better than narrow lanes. One most remarkable instance was Unthank's Road, which was being built up at the lower part where it was extremely narrow, so that instead of being made a great artery for the traffic of the city, it was converted into a mere lane, and it ought to be called Unthank's Lane—not dignified by the name of road.

No doubt before many years were over the city would have to incur a large expenditure in widening that and other roads. How shortsighted, then, was the policy of allowing such encroachments to go on!

To show what bearing these points had on public opinion long ago, Dr. Eade pointed out that even in Shakespeare's time the question was raised, as was seen in "Julius Cæsar." Mark Antony, in his speech to the citizens, first asks—"Wherein did Cæsar thus deserve your love?" and then the reply comes (by his Will) "To every Roman citizen he gives seventy-five drachmas ;" and afterwards—

" Moreover, he hath left you all his walks,
His private arbours, and new planted orchards
On this side Tiber ; he hath left them you
And to your heirs for ever ; common pleasures,
To walk abroad and recreate yourselves."

Dr. Eade proceeded to say he wished there were Julius Cæsars at the present time desirous of making wills for the benefit of Norwich. He then quoted the opinions of Lord Shaftesbury and the *Lancet* as to places of public recreation and their influence upon the physical and moral welfare of the population, and added, that he fully agreed with the writer in the *Daily Press*, signing himself "C. I. T.," when he wrote—"The city expects the authorities to guard the health and lives of the humbler population at all costs."

Other towns had done and were doing that which he wanted them to do in Norwich. Towns as large as Birmingham and as small as Falmouth, had provided public parks, and many had more than one. Birmingham had seven parks and recreation grounds, Sheffield four, and Bradford three, while the latter town had lately spent £150,000 in carrying out what he was now advocating. Norwich had a population of 90,000, and was rapidly increasing and spreading on almost all sides—open spaces being constantly taken up for building purposes. Though

they had playgrounds attached to School Board schools, he was sorry to find they were not available to the juvenile population—that they were only open to the children attending the schools during school hours, or a few minutes before and after school.

Norwich stood the very lowest on the list of the towns of England with regard to this question of recreation grounds. They had waited and waited until the difficulty of providing such places had greatly increased, while if they waited longer these difficulties would become almost insuperable. When he first started in this matter he could have found, or had the offer of, several open places, but those were now built over. He, at that time, took a great deal of trouble in the matter, but soon found that notwithstanding the support given him by several prominent citizens, it was far too large a matter for a single individual to carry through; but now he had the honour of a seat in the Council he claimed their attention, and, if possible, their powerful sympathy and support. They might ask where was the demand for recreation grounds. He asked those who had children to bring up whether they would allow them to play in narrow streets and crowded courts breathing impure air? What was the reason of there being so many puny, delicate, and small children? He ventured to say this was almost entirely due to the unwholesome surroundings in which they were brought up. He mentioned that in Glasgow recently, one medical man lecturing in that city said that in one year he had treated 330 cases of children with deformed bones—bent legs, bent thighs, knock-knees, &c.—which deformities were entirely due to the want of proper development and to their unwholesome surroundings. Much superior in many respects as Norwich was to Glasgow, he ventured

to say that the same condition of things existed here. But the demand for places of recreation was, he contended, proved by the fact that whenever a plot of ground was cut up for building purposes, children crowded there from all parts of the city to play, and this they continued to do until driven away by the advance of bricks and mortar. Then, too, Chapel Field, when it was open, was often taken advantage of by 500 and 600 children and others, who went there for play and enjoyment.

After making other observations as to the need of such places, Dr. Eade said there were two ways in which the want might be supplied. Playgrounds could not be taken close to every door; but in every new district care should be taken to secure the setting apart of a certain amount of space for the children. One plan he would suggest was that at various points in the city a field should be purchased and thrown open to the children; and another plan was to purchase or hire a large space which might be converted into a people's park, with a small portion set apart for the use of children.

It might be said that such places would really be used by the rough portion of the population; but he contended that it was for just this portion of the population they were most required. Let the rough children be brought up to know the worth of fresh air, what it is to have healthy frames, so that in after life they may not be poor and puny and miserable. The very fact that the rough children of the poor would use these places was an argument in favour of their provision. A healthy body meant not only a healthy mind, but a contented mind; and with recreation grounds for their use the children might be expected to grow up amenable to proper and right feelings, and in every sense better members of the community.

Believing as he did in the doctrine of *salus populi suprema lex*, he earnestly recommended the Council to take some steps in the direction he had indicated.

He concluded by moving—"That this Council, recognising the duty of providing recreation grounds for the children of Norwich, appoints a special committee to consider and report as to the best means of carrying out this resolution."

A Committee of the Council was then at once appointed.

NOTE.—At this date there were practically no public recreation grounds. At the present time we have the following:—

Mousehold Heath, 150 acres.

Chapel Field Gardens.

The Castle Gardens

The Gildencroft.

Waterloo Park.

South Heigham, 6 acres.

The Woodlands Plantation (given by Mrs. Pym).

Lakenham and St. Martin's Bathing Places and Grounds.

Eaton Park, 80 acres.

Besides the numerous smaller spaces and churchyards which have been re-arranged and planted, and made both pleasing and (many of them) suitable for outdoor use or rest. For the promotion and carrying out of these, we are most largely indebted to Mr. Edward Wild, Mr. W. E. Hansell, and the Rev. J. Callis, with one or two others.

This and the next following Address were the outcome of the very strong impression produced upon the Author by observing the puniness or physical inferiority of much of the poor population with whom he had to deal as Physician to the Norwich Dispensary, when first coming to Norwich, as compared with that of the neighbouring country district where he had formerly resided. It appeared to him that want of outdoor exercise and the public-house habit were the main causes of this difference. And hence these two subjects of *Recreation* and *Temperance* at once engaged his attention, as they have continued to do ever since.

How such views have now developed, and also that of the necessity of good air and exercise for the young, in order to normal adult health and vigour, is patent to all.

II.

ON TEMPERANCE AND AIDS TO TEMPERANCE.

An Address given at the Parochial Hall, South Heigham, in March, 1879, at a meeting held for the purpose of forming for the parish a branch of the Church of England Temperance Society, the Rev. J. Callis, Vicar, presiding.

Reprinted from the *Norwich Mercury* of March 5th, 1879.

THE evils of excessive drinking are vast and widespread. As doctors, we are constantly being brought face to face with them—in injured health, in wasted life, in ruined homes. Much has been said, and will doubtless be said again to-night, on these points; and the desirability of a Temperance Society for this, as for other parishes, will be enforced. But believing that our object is to promote temperance in every possible way, I shall to-night allude to some of those social conditions which necessarily have a great bearing upon this important question.

Now, it is well known that much difference of opinion has existed as to the influence exerted by fermented liquors when taken in small or reasonable quantities, some thinking that in these small quantities they are pleasant and practically harmless; others holding that in no quantity are they either necessary or even free from injurious effects. Whatever may be the absolute truth of either of

these opinions in reference to a limited use of these liquors, I think all are of one mind as to their pernicious effects when taken in any considerable quantity. All are agreed that drunkenness is a vice, baneful to the individual, hurtful to his friends; while doctors and physiologists are unanimous in asserting it to be positively proved that a too free use of them not only produces the outwardly injurious effects with which we are so familiar, but also gradually induces such degenerative disease of various internal organs as undermines the health and materially shortens the existence of the individual. With such a conflict of opinion still existing, our society wisely declines to decide that which science has been unable to settle, and opens wide her doors, and asks both these classes of thinkers to come in. She invites one section of her members to do no violence to their views of what constitutes temperance, or of the right way of influencing their neighbours. She merely asks them to join this society, and simply pledge themselves to practice and encourage that temperance as to which everyone may agree. But she tries to speak more mildly to those who are travelling in the well-trod road of Intemperance, which leads to mental and bodily ruin; and she entreats them to embrace the only means yet known which can save them from their destructive course. She asks them to pledge themselves to endeavour, by entire abstinence from the destroying drink, to save themselves from the miserable end to which they are hastening.

Speaking for myself and of myself, although a very moderate and small drinker, I am not an abstainer.*

* 1908. For the last five or six years I have practically been an abstainer, and my health has greatly improved in consequence. I am now eighty-three years of age.

But though believing that many persons may take a small quantity of fermented liquor without being the worse for it, I also know that to many persons even a small quantity is more or less injurious; whilst as to others, I can but repeat what has been so often said before, and I do it with the greatest possible emphasis, that to many alcohol is a positive poison, unsuited to their temperaments, destructive to their health, and productive of the worst evils, both morally and physically. It is curious to notice, in passing, not only that the use of wine is alluded to through a large part of the Bible history, but also that the injurious effects of it seem always to have been precisely the same in character as those which are so much dilated on in the present day. Dr. Richardson, perhaps the greatest living exponent of the physiological properties of alcohol, and the greatest denouncer of its habitual use, speaks of its effects according to the increased quantities in which it is used. He describes its influence thus:—"In the first stage of alcoholism," *i.e.*, in small quantity, he says, "it tends to paralyse the minute blood vessels, producing their relaxation and distension, illustrated by the flush seen on the face of those who have (in familiar language) been drinking, by the redness of the eyes and nose," &c., &c. This stage of excitement, he describes as being followed—if the quantity be increased—by some loss of muscular power, with disturbance of the reasoning powers and of the will; whilst again a further quantity produces a complete collapse of nervous function, when the drunken man, who previously, perhaps, had been excited, talking loud, and staggering in his walk, becomes stupid, helpless, and falls into a heavy sleep. And are we not all familiar with the quotations:—"His eyes shall be red with wine"; "Wine is a mocker; strong drink is

raging"; "They are out of the way through strong drink, they err in vision, they stumble in judgment"; "They shall drink and make a noise as through wine"; "Who hath woe? Who hath sorrow? Who hath contentions? Who hath redness of eyes? They that tarry long at the wine." "At the last it biteth like a serpent, and stingeth like an adder."

Those who have taken the trouble to read Dr. Richardson's lectures on alcohol, will see that the effects of wine, as thus described long ages ago, are identical with those which he found experimentally to result from alcohol at the present day; and the redness of the eyes, the contentions and quarrelling, the loss of judgment, and the ulterior disastrous results to the health, spoken of in the infallible Word, are only too familiarly known at the present day. Nor let it be said that wine is not the beverage of the multitude at the present time. For this point has also been experimentally investigated by Dr. Richardson, and he found that whatever the alcoholic drink, or whatever the adulterations, the effect of these variations was insignificant, and that the real evil results of drinking were always due to the alcohol contained in the fermented liquors, whether these were wine, beer, or ardent spirits. But the subject of drinking and its evil influences, both physical and moral, has now been so long and so often placed before the public, that I shall gladly employ the short time left to me in alluding to some suggestions which have been made, with a view to assist in remedying the drinking habits of the people, and to enable them to wean themselves from these where no hope of voluntary or total abstention on a large scale can reasonably be hoped for. These suggestions have been very numerous. The first and most sweeping suggestion is the well-known one, which ignores every

other consideration but the evil effects of the excessive use of alcohol, and proposes to get rid of drunkenness by rendering it impossible to get the drink. Legislation tending to this end was tried, as is well known, in America, under the title of the Maine Liquor Law, but its success has not been such as to induce other localities to follow the example. Again, systems of partial restriction, such as are known as the Gothenburg system, have been tried, or proposed, in the form of a Permissive Bill, such as has been advocated by Sir Wilfrid Lawson; but neither of these have commended themselves to the judgment of mankind as being the right solution of this question. The fact is social man and mankind constitute a large question. Over indulgence is not limited to the cravings of the stomach. Vice would not be eradicated by the simple removal of beer, however much assisted by it, and man would not be at once raised to the desired moral level were public-houses at once abolished. And so out of this conviction have arisen the various efforts which have been made, and are being persistently made, to attain, or assist in attaining, the wished-for results by more gradually acting moral means. These means, or *aids to temperance*, as I would call them, embrace several distinct influences, all of which such a temperance society as this is calculated to exert. They consist, primarily, in diffusing among the population, by meetings, by speeches, and by writings, a thorough knowledge of the personal evil which such habits necessarily and inevitably produce; (1) By bringing to bear the influence which friends and neighbours, so instructed, can exercise; (2) By forming public opinion and rendering it so forcible that the general mass of individuals must needs bow to its dictates; and, lastly, by these and all other assisting

means, endeavouring to strengthen the personal control of self, and to make the individual himself contribute entirely to, not only his own good, but, by his improved example, to that of his neighbours and the community at large. I trust that through the force of public opinion it will soon be thought by the working classes as vulgar and as low to get intoxicated, as it now is by those with more advantages of means and information.

Much has been said and written about the influence which *education* is likely to exert in the future upon the habits of the people. There can be no doubt, I think, that the influence which will be gradually so exercised will be very great. A mind trained to better things will abhor and revolt at the gross pleasure which it would otherwise have tolerated or enjoyed. And we all (I am sure) rejoice to see that education is being spread abroad in our land, and that the rising generation will all, in greater or less degree, have their minds trained sufficiently to prevent their slumbering in the lowest abysses of non-development, and to awaken them, and to lead them to the knowledge at least that there are better enjoyments in the human body and the human mind than the false and injurious excitement of incessant alcoholic stimulation. But, unfortunately, education is like a tree. It takes a long time for its development, and the circumstances of the time are too urgent to wait in dependence alone upon this agency. For all the while that we are talking, the world is living and acting, and living under such conditions that, if present customs are to be changed, others and better ones must be found and provided in substitution for them.

There is a population to deal with, a people largely and often exhaustively occupied during the day, and so occupied, that a large portion of it requires some relaxation

in the evening, after the hours of toil shall have passed away. In the country districts the difficulty is less ; but in the crowded districts of our large towns, where often many houses, without any surroundings, exist, and these, when present, often not the most wholesome or commodious, some means of passing the evening in reasonable recreation are absolutely necessary. The richer classes even, in large towns and cities, have felt the need of their *clubs and meeting places*, and gradually, also, working-men have followed this example, and have, in many places, set up their clubs of various kinds. If anyone would like to know the demand that exists for evening places of resort, I would ask him to observe the throngs of people who pour out of the public-houses on their closing at the hour of eleven at night. It is not to be supposed that all the frequenters of these houses of entertainment are drunkards, are even lovers of strong drink, although, from the constitution of these houses, they must necessarily drink to pay for the accommodation they receive ; but they use them as clubs, as the only places open to them in which they can spend their evenings, and in which they find the light, the warmth, the company, the newspapers, the interchange of speech, which they crave, and which are there alone obtainable. This view of the uses to which the public-house parlour is applied, is confirmed by observation of what happens when a well-appointed circus or other similar place of outdoor amusement is located in such a town as Norwich. For although no drink, good or bad, is sold in the building, yet it may be seen for weeks together to be nightly thronged by a company of one, or, perhaps, two thousand people.

Acting upon this idea, and on this principle, there have now been established in many places public-houses without those elements which render them undesirable. The

Café Company's houses, like to that recently opened in Norwich (and to which, I am sure, we all wish good speed), in which provision is made for amusement, for food, and for non-intoxicating drinks, are of this class, and so are the establishments of the London Coffee Public-house Association, and the Coffee Tavern Company, and others. But a recent writer (Mr. Moggridge, *Macmillan*, October, 1878) goes much further, and suggests the trial of the plan of retaining the present public-houses, while keeping their attractive features, throwing the sale of drink so far into the background that it shall be the least prominent and important part of the establishment.

At present, of course, the public-houses exist only or chiefly in the sale of fermented liquors, and not for the benefit of the frequenter, whose primary object is often, at least at first, the enjoyment of the public parlour and its society. The writer above mentioned proposes, at least for a time, to convert them into veritable clubs, where fermented drinks can certainly be obtained, but where they shall by no means be the great and prominent part of the refreshment provided. He thinks that then it might be possible gradually to wean a large portion of their frequenters from their drinking habits, and gradually also to introduce a better and more harmless system than now prevails. Whether or not such a scheme as this is practicable, or even desirable, it appears certain that in any attempt to close the present houses of public resort, other and more suitable ones must be provided.

Before quitting this part of the subject, I would desire to call attention to the laudable attempts already made in two adjoining parishes to furnish a sort of evening club room for the use of the poorer parishioners. In

one of these parishes, I believe, the mission room is open for use every evening, and in the other a commencement has been made by opening the schoolroom on Saturday evenings. For these, newspapers, or reasonable games, are essential, and it is probable (as man is both a hungry and thirsty animal) that if they are to be permanently successful both food and harmless drinks must be obtainable; but whether tea and coffee will be sufficient, or whether some of the various unfermented drinks are required, which are described in a little book called, "*A Book of One Hundred Beverages*," I must not now stay to consider.

In England and countries of similar climate, the recreation difficulty is much greater than in more favoured countries, where the climate, in a larger portion of the year, admits of the evening hours being passed in the open air. Here, for months together, the evenings' relaxation must needs be within doors, and in many towns there is literally no place of indoor resort but the public-house, and, perhaps, the theatre.

A great aid to temperance will doubtless be given when, under the operation of the Artisans' Dwelling Act, or other similar legislation, the character of the worst localities of our towns improves. It is notorious that the narrower the streets, the more crowded the courts, and the worse the houses, the more do gin-palaces flourish, and the more does the population give itself up to the artificial stimulus of fermented liquors. And the reason is not far to seek, for if there be an absence of all comfort at home; if the house be small, and crowded, and dirty; if the water be bad, and perhaps unsuited for drinking; if there be no bit of garden in which to lounge, and to grow a few things in which interest can be taken; if there be nothing in

home to render this agreeable—then, as a matter of course, recourse is had to that neighbouring house where nearly all these conditions are reversed, and dirt, and squalor, and crowding are exchanged for light, and brightness, and space.

I have said that an English climate is less adapted than many others to *out-of-doors' recreations* and amusements. Yet there is, even in England a very considerable portion of the year in which the existence of public parks and recreation grounds would contribute very largely to the promotion of temperance by providing pleasant spots in which to pass the hours unabsorbed by labour. But, I am sorry to say that our old city of Norwich has sadly degenerated from the time of Pepys, and enjoys an unenviable pre-eminence in the entire absence of these most desirable public spaces within its boundaries. With the exception of Chapel Field, we have not a single open public space. There is not a spot where the lads can play at cricket or football, or where their seniors can lounge away an evening hour; while as to a public park, the chance of this appears to grow dimmer and dimmer as the population of the city spreads and increases. I have ventured on more than one occasion to call attention to the need of such places for Norwich, and I have pointed to Mousehold Heath as a place which should, at all costs, be preserved for the city. But time passes. Several available spots for public recreation grounds have, one by one, been absorbed for building purposes, and Mousehold Heath—a space which appears to have been specially provided for the health and salubrity of future Norwich, and whose beauties and capabilities must surely be unappreciated by our citizens—is being gradually devoted to gravel pits, to brick kilns, and—to destruction. And let it not be supposed that

the temperance of a population has no relation to its health and its general welfare. Beyond the attractions of a fresh and open spot, as a counter attraction to the public-house, the growth of a strong and healthy population tends powerfully in the direction of temperate habits, for the feeble and weakly will naturally seek indoor resorts, whilst the strong and the muscular will equally surely seek the open air. I wish I could think that Norwich was not suffering from this cause. But whoever observed the generally puny appearance, the poor *physique*, and the frequently strumous aspect of many of the children and youth received into our schoolrooms during the late flood, and many of whom came from the most crowded parts of the city, must have been struck with the evidence they afforded of the want that existed for them of light, of air, and of healthy exercise.

Lest I should be thought to be dwelling too long on a subject of little importance, or little bearing upon this night's proceedings, let me read over to you a list of those places in England (and I am not sure that it is a complete list) which, during the past two or three years, have either had presented to them or have felt it their duty to provide public parks and recreation grounds for the use of the residents:—Reading, Birmingham, Dublin, Wigan, Leicester, Limerick, Lancaster, Heywood, Derby, Wolverhampton, Leeds, Longton, Torquay, Sheffield, Swansea, Newcastle, Exeter, and Falmouth.

The only other aid to temperance, to which I will now allude, is that of *public galleries of art and natural history*, and so forth. These are but small aids, but still they are appreciable ones, and I would gladly see such in Norwich. I do not know how far the disused gaol would be convertible to such public purposes, but it has struck me that the site is an admirable one, and the space ample

for the collection in one spot, of an art gallery, museum, free library, popular lecture rooms, and for any other purposes which might properly come under the heading of popular instruction. The former city gaol has long been used as a public library. It would be a happy change if the late one could now be devoted, not to the punishment but the prevention of crime; not to the expiation of the results of indulgence in drink, but to the better training of men's minds, so as to teach them, by instinct and by culture, to avoid the destructive paths of vice and of excess.

I think, sir, I have said enough to show how large is this temperance question, in which we are all, in which, indeed, the whole community, is so greatly interested. In proof of its recognised importance, we may point to the fact that doctors, physiologists, ministers of religion, peers of the realm, and even a Prime Minister, have raised their voices in opposition to the progress of the crying evil of drunkenness. Many earnest men have striven, by the influence of their continued advice, and by the example of their personal abstention from intoxicating liquors, to help on the good work; and many others have done so in various indirect ways, and especially by efforts to ameliorate the condition of the people, and provide for them alternative means of harmless and rational occupation or amusement. These efforts are so persistent and now so general; they are founded upon such complete knowledge, and such recognised necessity, that they cannot fail rapidly to produce good fruit, and I believe they have already produced some good fruit in Norwich. But as social knowledge ripens, as acquaintance with the means of securing the general well-being increases, so we may hope that the difficulties attending the reformation of evil habits will lessen; and

although we may not hope to see established a condition of houses, of streets, of towns, of food and drink, of labour, and of all those conditions which would render human life and surroundings ideally perfect, yet continuous efforts must be made to realise for the community such moral and physical surroundings as shall conduce to their welfare in the highest possible degree. And to this end, let us be sure that nothing will contribute so much as that soberness and temperance which it is the object of this Church of England Society to encourage and inculcate.

ON TORTOISES.



TORTOISES.

III.

ON TORTOISES.*

I HAVE almost to apologize for bringing before so learned and critical a Society as this, the few notes and observations I have made upon the "manners and customs" of my pair of common land Tortoises, partly because I feel that much of what I have observed must also have been observed by other members of this Society; and still more because (as is well known) that incomparable master both of observation and expression—White of Selborne—has already noted, and placed upon record, the most interesting of the habits of these creatures.

Mine is thus necessarily a "twice-told tale." I can only hope that the never flagging interest which naturalists take in the observation or record of the habits of animals, will suffice to make them bear with me for the short time I shall detain them.

I have in my garden two of the common land Tortoises (*Testudo Græca*), and these have been in my possession three and four years respectively.

I purchased them from the barrow of a hawker in Norwich streets, in two following years—one being a little larger than the other, and they are in consequence

* Read September 28th, 1886, and reprinted from the "Transactions of the Norfolk and Norwich Naturalists' Society," Vol. iv.

known by the names of the *old gentleman* and the *young gentleman*.

Although selected as the best from a number of others, I am sorry to say that they both appeared to be ill or greatly injured, and it was a considerable time before they recovered sufficiently either to begin to take food, or to move about with their proper freedom, or with the well-known liveliness of Tortoises !

Another Tortoise, which I purchased, did actually die a short time afterwards, having lived in a state of semi-stupor for the intervening period ; and I fear that the capability of these creatures for suffering is not much recognised in the usual methods of their conveyance and treatment.

The two Tortoises which survived have, as I said, now lived on my premises and thriven for three and four years. They have become almost pets. They most evidently recognise the place as their home. They know the various localities of the garden perfectly. They know the sunny spots to which to go at suitable times to bask. They know where to find sun, and where to find this and shade combined, when they so desire it ; and they return, afternoon after afternoon, to the same cosy, and dry, and sheltered spots, under the dry ivy of the wall, or elsewhere, which they have often previously selected as their night's abode.

It is very plain that they have some recognition of individuals. For instance, if Lady Eade and myself are both preparing to feed them, they will constantly leave me and walk off to her—doubtless because she is more in the habit of bringing them their favourite kinds of food than I am.

They appear to be quick of *sight*, but show very little, if any, sign of having any impressions conveyed to them by

the sense of *hearing*. They evidently possess a full sense of *taste*, for they discriminate instantly between food they like, and that which is less palatable to them.

The daily *habits* of these creatures are certainly very staid and methodical, and vary but little, except as the season of the year, and the warmth of the day, vary.

They are often, in the height of summer, quite early risers, and on sunny mornings will often be up, and perambulating the garden, and nibbling the little trefoil leaves found amongst the grass, by seven or six o'clock, or even earlier. But, I must say, that these early habits are quite limited to the very finest weather; and it has seemed that in the matter of early activity, these animals always err, if at all, on the side of care and caution. They never leave their beds, or the neighbourhood of cover, if there is the slightest appearance of cloudiness or rain, at least until the day is well up; and for a large portion of their year the time for coming forth is not until eight, nine, or ten o'clock.

In electrical weather they are never lively, even though the day be intermittingly hot and bright; and at such times they are often almost lethargic, and show great indifference as to feeding.

They appear to have an extreme and instinctive objection to rain. Cloudy weather makes them dull. A passing cloud will make them discontinue eating. And the passage of a person or object suddenly between them and the sun will cause them as suddenly to draw in their heads. The dislike of clouds and their accompaniments is therefore a very marked instinct with them.

If not fed, they will go and help themselves, not to grass, but to some white Clover growing with the grass in the garden; or in default of this, to some of the garden plants—by preference the fleshy-leaved ones, such as the

Echiveria or Sedum—after which they will retire to some warm place, and bask in the sun. They have a special liking for the warm vine-border in front of my greenhouse; and if the day be not too hot, they will tilt themselves up edgeways against the south wall of the greenhouse, or upon the edge of some tuft of flowers; or if the sun is too warm, they will then cover their heads up with leaves or earth on the bed, leaving their backs uncovered and exposed to the heat. (In this respect they seem to remind us of the habits of the tiger in his jungle.)

But they appear greatly to prefer being fed, and having their food found for them; indeed further, one, at least, much prefers to have his food held up to him, and almost put into his mouth when he opens it.

They take their food with a snapping movement; masticate it little if at all; and when feeding themselves, cut or tear it with the sharp-hooked anterior portion of the upper jaw.

In the hottest weather their appetites are very fine (thus they will eat several large Lettuce leaves at one time), and they bear a close relation to the warmth and clearness of the day, and the period of the year.

Their favourite foods are—besides Trefoil, already mentioned, and garden flowers—Lettuces, Dandelions, French Beans, &c. They are much attracted by yellow blossoms, and greedily eat those of the Dandelion and Buttercup. One of my creatures is very fond of sliced Apple, though the other will not eat it.

But the vegetable of which they are most fond is the Green Pea. Both of them will leave all other food for this, and they will consume at a meal a very considerable number of these Peas. Indeed, so fond are they of them, that they will follow a person accustomed to feed them

with them about the garden, and will even try to clamber up his legs to get at them.

After sleeping and basking, they will again eat, and then again sleep once or twice more during the day ; but in cooler or doubtful weather, they usually eat only once a day, and sometimes not at all.

Although those who hawk Tortoises about the streets will often tell purchasers to put them into their kitchens that they may eat Beetles and Cockroaches, I believe it to be well understood that they are intrinsically vegetable feeders ; a position well put by Frank Buckland, who says that Tortoises put into a kitchen to eat Beetles will in due time die of starvation, and then most probably the Beetles will eat them. Certainly ours never eat anything but vegetable food. But a Tortoise in a neighbouring garden does every morning consume a very substantial quantity of bread and milk, or rather bread well-soaked in milk, and he appears to thrive well upon it. Our Tortoises never drink water, and are decidedly not tempted to drink by milk being offered to them.

Whatever the season, the Tortoises retire very early to bed. The warmth and sunniness of the day appear to regulate the exact time, but they rarely remain up after three or four o'clock, and in the cooler seasons, or on dull days, they retire much earlier.

They will go day after day to the same warm and leafy nook ; and they have a habit on rising in the morning of simply turning out of bed, and lying for a time just outside of their bed-place, with their heads stupidly stretched out, or staring vacantly up into the air, before entering upon the serious business of the day.*

* It is noticeable how they both do the same thing, in a precisely similar way, at the same time, and this applies even to the attitudes they assume.

I should say their *Memory* is very strong. I have said they remember persons. They remember places they know, and if carried away will march straight off and back again to the place they wish to go to; and what is more remarkable, when brought out in the spring after seven or eight months' hybernation, they do exactly as they did the day before they went to sleep; and will march off as direct to the old spots as if they had only had one day's interregnum.

As a further instance of memory or intelligent knowledge, we are constantly in the habit, in the cooler weather, of putting them to bed under a mat in the greenhouse; and we very constantly find them, in the morning, waiting by the greenhouse door to be let out, clearly remembering that this is the place by which they will have to pass into the open air.

They do not appear to care much for each other's society—(I believe they are both males)—but they do not fight. Neither are they respecters of each other's persons, for they walk over each other's backs in the most indifferent way, if either happens to be in the direct road of the other's progression.

One of the creatures is certainly fond of climbing. We have several times found him mounted (when shut up in the greenhouse) upon the other's back; or upon an inverted flower-pot; and once we found him in a most pitiable condition through the exercise of these scandent aspirations. He had evidently been endeavouring to climb up some flower sticks placed slantingly against the wall, and in doing this he had turned over upon his axis; and when we found him he was reclining upon his back against these sticks, and standing upon one hind foot, whilst with the other, and with his fore feet, he was making frantic efforts to reinstate himself

in a more comfortable position. As so placed he reminded us irresistibly and ludicrously of a huge toad held up by a fore leg.

Our Tortoises have certainly got tempers. They hiss when they are meddled with. They resist and try to scratch, or otherwise hurt, when lifted up from their place of repose; and they exhibit distinct petulance, and will jerk themselves forward out of your hand when you are again placing them upon the ground.

They are also very particular when going to their evening places of repose, and most distinctly refuse to go to rest in the place in which you try to place them, however comfortable this may appear to be, even if they have previously selected this spot for themselves day after day.

Mr. Darwin speaks of a large kind of Tortoise which is reputed to be able to walk at the rate of sixty yards in ten minutes; *i.e.*, three hundred and sixty yards in the hour, or four miles a day. I have twice timed the rate of progress of one of my Tortoises. Once it walked ten feet in the minute, and another time twenty feet in the minute. This latter is at the rate of twelve hundred feet, or four hundred yards, in the hour; or of a mile in between four and five hours. This truly is not quite the ordinary rate of the hare's progress, but I think they can cross a certain small distance of ground much more rapidly than we should at first suspect.

Once more. These creatures distinctly grow in size from year to year. Our two measure respectively seven and seven and a half inches in length. And they must have elongated fully an inch in the three and four years of our possession.

I weighed them this year, on May 29th, soon after their waking up for the summer, and again on September 8th.

They weighed in May, 2 lbs. $7\frac{1}{2}$ ozs. and 2 lbs. $3\frac{1}{2}$ ozs. ; a fortnight ago they weighed 2 lbs. 10 ozs. and 2 lbs. 5 ozs. ; having thus gained in weight through their summer feeding $2\frac{1}{2}$ ozs. and $1\frac{1}{2}$ ozs. respectively.*

When the due period arrives in which they naturally bury themselves, and so surround themselves with earthen bulwarks, and then retire for the winter into their carapace castles, we put them down into a cupboard in the cellar.

Mr. White remarks that his Tortoise did not bury itself into the ground before November 1st, but ours are cold and torpid, and quite ready to hybernate by the first week in October. Probably the different latitude and longitude of Selborne and Norwich may account for this difference of time.

In this cellar cupboard, the Tortoises remain until the end of April, when, though still dull and stupid, the weather is getting sufficiently warm for them to enjoy the sun for a portion of the day. But the frosts and cold of this period of the year are still dangerous. And a relative of mine lost both of his old friends (who for years had taken care of themselves in the winter in his garden) during the cold weather of this spring, after they had duly survived the far greater cold of the winter in the ground places in which they had buried themselves.

From October to April—fully seven months—they rest from their labours of eating, of breathing, shall I say, of thinking? (or nearly so, for they occasionally stir a little, and are found to have moved a little from under their straw). But they neither eat nor drink, nor see light, nor

* April, 1887. They have just been again weighed, after their winter's hybernation ; and their weight now is, respectively, 2 lbs. $7\frac{1}{2}$ ozs. and 2 lbs. $2\frac{1}{2}$ ozs. Thus each of them has lost $2\frac{1}{2}$ ozs. in the seven months of quietude.

(I believe) open their eyes. And when touched during this time they feel of a stony coldness, and certainly appear to have none of their faculties in operation.

But with the warmer weather, they again gradually resume the precise habits of the preceding year. Gradually, their bright little eyes resume their intelligence; their memory re-awakens; and they return to the ways, and the habits, and the places of the preceding season, as if their sleep of seven months were but a single night, and last summer verily but as yesterday.

They are in many respects both curious and remarkable animals. We find them to have enough of intelligence, enough of quaintness, and apparently enough of affection, to give them considerable interest in the eyes of their owners, and to raise them out of the level of despised reptiles. Whilst their remarkable construction, and mysterious power of hybernation, render them specially worthy of study and contemplation.

These specialities and peculiarities must be my much-needed excuse for having troubled you so long with these few details of their personally observed habits and ways.

IV.

A FURTHER NOTE UPON TORTOISES.*

IN the year 1886 I read before this Society a paper in which I recorded some of the observed habits and peculiarities of a pair of Tortoises which I had then kept in my garden for three and four years respectively. This paper was afterwards published in our Society's "Transactions" (Vol. iv. p. 316), and will probably be remembered by some of our members.

I would like this evening to say a few further words upon these creatures, which are still living and in my possession—more particularly with reference to their *rate of growth and increase*.

The two Tortoises have now been in my possession ten and nine years respectively. Six years ago I reported to this Society that *they measured*, the one $7\frac{1}{2}$ and the other 7 inches *in length*. Now at the end of six further years their antero-posterior measurements are $9\frac{1}{2}$ and 9 inches respectively—the measurements being made from before backwards over the convex surface of the carapace. They have, therefore, each of them, thus measured, increased exactly two inches in length in the last six years, or at the rate of exactly one-third of an inch per year.

* Read November 29th, 1892, and reprinted from the "Transactions of the Norfolk and Norwich Naturalists' Society," Vol. v.

(The under flat surface of the shell now measures $6\frac{1}{2}$ and $6\frac{1}{4}$ inches from before backwards. These Tortoises are said not usually to exceed 10 inches in entire length.)

Then as to their *weight*. I have now kept an exact record of their respective weights in the spring and autumn of each of the past seven years, *i.e.* their weight on commencing to hybernate in October or November, and again their weight on returning afresh to light and more active existence in April or May of the following spring. And it is interesting to notice how almost continuously they have increased both in size and weight; and also how corresponding are the alterations, or otherwise, in the consecutive years, both of spring and autumn, of the two animals.

In my former paper, I mentioned that during the summer months of 1886, when I first weighed them, *i.e.* from May to September, my Tortoises had gained in weight, the one $2\frac{1}{2}$ ounces, and the other $1\frac{1}{2}$ ounces; whilst each of them became lighter in the following winter by $2\frac{1}{2}$ ounces. Since that time the spring and autumn weighings have been regularly continued, and the result is shown in the following table.

WEIGHT

YEAR.	OF LARGER TORTOISE.				OF SMALLER TORTOISE.			
	APRIL.		OCTOBER.		APRIL.		OCTOBER.	
	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.
1886 ...	2	$7\frac{1}{2}$	... 2	10	... 2	$3\frac{1}{2}$	... 2	5
1887 ...	2	$7\frac{1}{2}$	... 2	10	... 2	$2\frac{1}{2}$	... 2	5
1888 ...	2	10	... 2	$13\frac{1}{2}$	... 2	5	... 2	$8\frac{1}{4}$
1889 ...	2	13	... 2	14	... 2	8	... 2	$8\frac{1}{2}$
1890 ...	2	$12\frac{1}{2}$	... 3	$0\frac{1}{2}$	... 2	$7\frac{1}{2}$	... 2	12
1891 ...	2	$15\frac{1}{2}$	... 3	2	... 2	10	... 2	$12\frac{1}{2}$
1892 ...	3	1	... 3	$3\frac{1}{2}$	... 2	12	... 2	$14\frac{1}{2}$

In the seven years, therefore, 1886 to 1892, the larger Tortoise has increased in weight from 2 lbs. 10 ozs. to 3 lbs. 3½ ozs. ; and the smaller Tortoise from 2 lbs. 5 ozs. to 2 lbs. 14½ ozs., giving a total increase of weight in this period of exactly 9½ ounces for each animal, or an average annual increase of about 1 ounce and 5½ drachms (avoirdupois).

The general result also of the above weighings is to show that, in average seasons in England, these creatures gain from 2 to 2½ ounces in each summer, and lose again a varying but considerable portion of this increase during the ensuing six or seven months of hibernation ; but, on the whole, showing an average gain of a little more than one ounce in the year—the average gain of weight per month in summer working out at about 6 or 7 drachms, with an average loss in the winter months of about 4 or 5 drachms per month. This last fact scarcely agrees with Cuvier's statement that "during winter . . . their loss of substance amounts almost to nothing."

It will be noted that the foregoing table shows certain variations in the increases and decreases of weight in the several years ; also that in two of the years there was but little change between the autumn and spring weights—this period of stagnation occurring in both animals simultaneously. Probably several causes for this were at work, but I have little doubt that the variability of our English seasons is by far the largest factor in the case ; and that the variations in the gainings and losings of the different summers and winters depend very largely upon the special character of these seasons. Thus, when the summer months are hot the Tortoises eat much more abundantly and constantly, and consequently put on (or rather put inside their skeletons) much more

flesh than in colder seasons. On the contrary, a warm autumn, with the temperature not sufficiently cold to make them go early and thoroughly to sleep, must conduce to greater loss, or rather waste, of their flesh, for it is well known that these animals cease to eat many weeks before they finally retire to rest for the winter; and necessarily during this period, especially on sunny days in which (even at this season) they are often moderately lively and active, they are doubtless breathing and consuming some of the material which has been stored up for winter consumption. Whilst again, in a very mild winter or spring they will, as is well known, frequently wake up from their dormancy, and of course, on each such occasion will make further inroads upon their reservoir of nutrient material.

It is therefore pretty certain that hot summers and cold winters are most conducive to their rapid increase in size and weight; whilst of course the contrary conditions would have an exactly opposite result.

Cetti says that the common Greek Tortoise seldom weighs above 3 lbs. My larger one now weighs 3 lbs. $3\frac{1}{2}$ ozs., and is still growing. But there is a Tortoise now in this city which weighs as much as 6 lbs. 5 ozs. I judge, however, from its size and form, that it may be a variety of the common Tortoise. This creature must be not only "an old inhabitant of this city," but thoroughly naturalised into a British subject, as it is known to have lived in Norwich for at least thirty years.

I have little to add to what I previously said (and to what White has said) as to Tortoise habits and manners. These appear to be very uniform, and to be guided by a most definite instinct; and it is very noticeable and very remarkable how the two Tortoises will constantly

both do the very same thing at the very same time, often almost at the same moment of time. For example, when feeding, even when apart from each other, they will constantly suddenly leave off eating almost at the same instant; or they will in like manner, when basking in the sun, both at once get up and walk off to some other place; or they will both all at once suddenly get up and march off to their evening place of shelter and rest—and this without any definite atmospheric or other cause that is appreciable.

Cuvier has well called the Tortoise “*un animal retournée*,” an animal inverted, or “turned inside out, or rather outside in.” And it is said that the large Land Tortoise, when withdrawn into its shell, “can defy the whole animal world except man, from whom nothing is safe.” And with reference to this point I have observed that our Tortoises, when retiring to rest, always take the greatest care to protect their noses and the anterior opening of their shells. When they burrow, their head is of course covered up by the earth. But when, as is often the case in the warmer weather, they simply go to sleep in some sheltered place, they habitually place their heads close against the wall, or under the projecting roots of a tree or shrub, so as not to leave this part exposed. I presume, therefore, that they are conscious of some insecurity, and it would certainly appear that their heads would otherwise be open to the attack of rats or other predaceous animals.

Professor Forbes describes the peculiar way in which he has in Greece observed the Tortoises to do their courting, *i.e.* the method by which the male Tortoise seeks to attract the attention of his lady-love, namely, by repeatedly knocking his shell violently against hers. I have noticed the same process in my own garden. Both my animals are, I

believe, males. But I have observed one of them, when in an amorous humour, to strike the other several times in succession a sounding blow on its shell; and this he does by suddenly withdrawing his head into his shell, so as to be out of harm's way, and then as suddenly throwing his body forward by a sort of butting process against the shell of his fellow. This proceeding causes a very considerable, and indeed, comparatively speaking, quite a loud and resounding noise; and at first sight these sudden and severe blows would appear to be more calculated to cause corporeal discomfort or injury than to excite affection. These very marked attentions are usually followed by the utterance of a quick and soft, or almost whining cry.

I will only add that my Tortoises show an increasing familiarity and sense of being at home as years roll on.

ADDENDUM.—On November 2nd, 1905, after a further interval of thirteen years, these Tortoises had respectively attained to a weight of 4 lbs. and half an ounce, and 3 lbs. 13½ ozs. as compared with weights of 2lbs. 10 ozs. and 2 lbs. 5 ozs. in 1886. They are therefore still growing in size and weight. In October of last year (1907) they weighed respectively 4 lbs. 2½ ozs. and 4 lbs.

V.

MY CHRISTMAS GARDEN PARTY.*

NORWICH is proverbially a City of Gardens, and many of the houses in St. Giles's Street, including my own, are fortunate enough to share in the advantage of possessing one of these valuable urban appendages.

As regards the birds that frequent these gardens, the neighbourhood of Chapel Field, with its trees and shrubs, is, or should be, an additional attraction to them; but I am bound to say that I have not observed so great a congregation, or so large a variety of birds, in Chapel Field Gardens as might have been expected.

My own garden consists of a plot of grass of fair size, with one large apple tree in its centre, a double laburnum tree close by, and with several other trees of good size on its confines. Some of the boundary walls are covered with ivy. In my neighbours' gardens are also both trees and shrubs, whilst Chapel Field is in the immediate vicinity, just beyond my stable yard.

There is thus a considerable variety of shelter for the birds, and, doubtless, a proportionate variety of food for them at the proper seasons.

* Read before the Norfolk and Norwich Naturalists' Society, February 22nd, 1887, and reprinted from Vol. iv. of the Society's "Transactions."

In ordinary years, and in average seasons, the following birds come into my garden :—

1. Our constant town friends, the Sparrows.
2. Blackbirds and Thrushes (a pair of each of which usually build and hatch with me, though I am sorry to say that their labour and pains are usually devoid of result, as the young birds are got by the Cats, either in the nest, or as soon as they leave it).
3. Starlings.
4. Robins.
5. Jackdaws (occasionally—from the neighbouring church steeple).
6. At rare intervals I see a little Wren, or Tom-tit, busily engaged on the above-mentioned laburnum tree, evidently getting a good meal from what it finds in the bark.
7. In the prolonged frosty or snowy weather the garden is occasionally visited by the Missel-thrush, and now and then also by
8. A Rook.

In the ordinary way, and in open weather, the *number* of my bird visitors is not large, but in the cold winter weather, and in response to my invitation, this number very considerably increases, so that at times I must have had as many as thirty-five or forty feeding in my garden at the same time. The increase of numbers is chiefly made up of extra Sparrows and Starlings; and when it occurs the scene is often a very lively one; the whole of the thirty or forty birds being often assembled very closely together in active movement; and the grass or garden path on which they collect is sometimes quite black with their feathered life.

The prolonged frost of the past winter is fresh in all our memories.

On January 6th, when I specially noted the assemblage of my bird friends, we had had intermitting frost and snow for about five weeks, almost continuous snow (with occasional yieldings of the frost) for a fortnight, and a complete snowy covering up of the garden ground for a week, with sharp frosts, and often low temperatures at night. There had been no sun, and, therefore, no melting of the snow by the wall, or by the hedge edges, and, consequently, doubtless the natural animal food of the birds was very scarce and difficult to obtain. Some food had been thrown to them daily during the greater portion of this severe weather; but for the preceding week they had been fed pretty regularly twice daily.

My usual *times for feeding* had been about 9.30 (after my breakfast), and about 2 p.m. (after luncheon).

When first fed, the birds—beginning with the Sparrows—seem only to find the food thrown out by accident, and would drop down by ones and twos, as their instinct or sense of far-sight appeared to show them that there was food to be had. But very soon they seemed to remember these fixed hours, and many of them, especially Starlings, would then be seen collected on neighbouring trees, or elsewhere, before these times, evidently ready and waiting for what they were expecting.

The Sparrows would be chirping in the ivy. The Starlings would be seen sitting on the watch on a neighbouring tree or trees, and as soon as the food was thrown down they would immediately begin to descend upon it.

Yet not all at once, or without due and proper precaution and inspection. First, the Sparrows—as the boldest—would drop down singly, but in rapid succession. Then the Starlings would draw nearer one by

one, and carefully look down and inspect the ground. And when one had summoned courage to descend, the rest would quickly follow. But, of course, the slightest noise would make the whole flock suddenly flutter up again into the trees, or into the next garden, as quickly to return when the alarm was found to be groundless.

After a little further time, a Thrush or a Blackbird or two would join the group. Later still, always late, a little Robin—quiet, silent, and pathetic—with its half timid and half confiding manner, would come into view. Again, after a further interval, occasionally one of the Jackdaws would appear upon the scene. And now and then, last of all, a huge Rook would suddenly descend and carry off some large crust which the smaller birds had left uneaten—reserved for more deliberate pecking at when the crumbs and smaller portions of food were disposed of.

The manners of these various birds differed strikingly. The Sparrows, of course, would be first and boldest, and everywhere.

The Starlings would often form a compact group around the outspread food, one of them occasionally darting off with a big morsel or savoury bone.

The Thrushes and Blackbirds would arrive quietly from over the wall; they would hop about usually on the furthest outskirts of the crowd, and as near as possible to their habitual corner. And the Blackbirds would waggle their tails in their own quaint manner, and perhaps give their peculiar cry, whilst both Thrushes and Blackbirds would evidently indicate their consciousness of superior manners and their greater dignity, if not their actually more retiring dispositions.

The little Robin, solitary and observant, would come

nearer to the house than the other birds; but his advent was usually too late for anything but the bare dry remains of the feast left by the rapacious Sparrows and Starlings.

The Jackdaw would fly straight to the apple tree, perch upon it, then suddenly descend and seize upon the biggest remaining morsel; then as quickly fly up again into the tree and try to eat it there. In this respect, in marked contrast to the Rook, which in the worst weather would occasionally suddenly arrive and help himself to the biggest crust left, but he would always at once fly away with it in his capacious maw.

I am sorry to say that my garden party friends have displayed a very considerable amount of selfishness. Each kind of bird, of course, selects first the kind of food most appropriate to it. But there is clear indication that the law of force prevails amongst them, and that might carries the day against fairness and right. And it is most clear that neither Communism, nor Socialism, nor Equality with Fraternity, is a doctrine in favour with them—at least in practice. As long as there is a good supply of the best eatables, my friends are most communistically amiable to each other. But as soon as the available supply begins to run short, then the most barefaced selfishness is the order of the day. The strong sparrows drive away the weaker ones, or pursue them and steal from them any dainty little morsel they may have secured and flown away with. The Starlings dart at each other and scream, or go through continual “fluttering duels” in their efforts to steal their neighbours’ goods; whilst the Jackdaws and Rooks have no reserve in displaying their views as to their practical agreement with Rob Roy’s well-known maxim.

I have not observed either the Blackbirds or Thrushes to fight for their food as the Sparrows and Starlings do.

The Starlings exhibit some other very peculiar ways. Before descending to feed they will sit upon neighbouring trees in an attitude of pensive watchfulness—one irresistibly reminding one of an old man leaning his head upon one side and resting it upon his hand. Their peculiar waddling walk or run and extreme liveliness of manner are well known; but when all the food is gone, and they return for a short season to their trees, they will often resume their philosophic or contemplative attitude—very soon, however, to disappear to “other fields and pastures new,” or in plain English, to some neighbouring and equally hospitable garden. And their capacity for food appears to be very great.

The *kinds of food* which I have thrown to my feathered friends have been bread and large crusts, oats, the refuse of meals, scraps of meat, bones of fish or fowls, herring skins, cheese rinds, portions of fat; and I have found that the animal matters are very greedily seized upon by nearly all of them, scarcely excepting the Sparrows. And it is remarkable what large bones of fish or fowl are rapidly and entirely disposed of; whilst still larger bones from a joint are picked and cleaned to the last available particle. Like bird-cannibals that they are, I observed that some bones from my Christmas Turkey thrown out to them, appeared to be very specially and particularly relished by them. When very hungry, not only will Sparrows eat some kinds of animal food; but Robins, Starlings, and Jackdaws will all eat bread crumbs and bread crusts.

It is sad to think what a mixed world this is even

for birds; and that even such a happy and interesting town gathering as I have described is not without its drawback, and this a very serious one.

Whilst the birds are making the most of their opportunities, gratifying their natural tastes, and exhibiting their peculiarities, a Nemesis, or vengeful fate, is constantly hanging over them, ever ready to overtake them in case of any relaxation of their habitual watchfulness, in the case of our own or neighbours' Cats. For these fat and feline creatures seem to be on the watch for their own good Christmas bird cheer; and with crouching, stealthy steps, and wagging tails, they actually do now and again succeed in stealing upon their unsuspecting victims, and in illustrating the inexorable law, as to food, of animal-feeding creatures.

It is pitiful to see a Sparrow or a Blackbird thus hopelessly engaged in the clutches of a Cat; and it is a sad interruption or ending of the scene of joy, if not always of harmony, I have just described.

Our own pet Cat, though over fed, cannot resist the temptation of thus stealing upon these birds when the chance occurs, and its excited movements when watching them through a window, but unable to get out, are a study in themselves.

To a certain extent the Starlings have now and then a sort of sentimental revenge; for when very hungry these bold birds will descend into the kitchen yard close to the house, and carry off bones and scraps placed there for the use of the said Cat, who has been seen to watch their theft of its food through the kitchen window in a state of trembling but helpless excitement, and evidently of intense disgust.

During all the time of my feedings I could but notice the wonderful instinct which the birds exhibit, of

discovering the presence of food. Sparrows are everywhere, and therefore it is not surprising that our home friends should be on the alert, and should quickly descend upon the feast prepared for them. But how do their neighbours and more distant friends so quickly know of it? How do the Starlings, who are not usually so near at hand, discover the good things available for them? How does the Jackdaw in the steeple learn of the meat or bones thrown upon the garden path? Or the Rook in the distant tree or field of the large crust which the lesser birds have been unable to dispose of?

It is clear that neither sight nor sound, as we understand them, would be sufficient to inform and direct them; and that the most delicate sense of such perception would be insufficient to enable them to perceive food placed, say, behind a garden wall.

I have observed that the birds usually arrive pretty constantly in the following order:—Sparrows, Starlings, Thrushes, Blackbirds, Robins, Jackdaws, Rook; though sometimes neither Jackdaws nor Rook will appear, and often the little Robin is so extremely late in his arrival that all the suitable food is eaten up.

The Tit, or Wren, or occasional Finch, seen now and then in the garden does not condescend to join or associate with such a mixed Christmas party as I have described, but comes at his own time, and in his own way. But these little birds have lately been such rare visitors, that I have not had the opportunity of making any exact observations upon their manners and customs in the parish of St. Giles.

I should scarcely have ventured to read these very simple and very superficial notes to this Naturalists' Society this evening had I not had reason to believe that they would form the starting-point of far more

scientific information about birds from one or more of its members now present.

NOTE, 1907.—Some other birds have occasionally visited my garden, such as Nuthatches, Redwings, Blackheaded Gulls, and a few others. As to the Gulls, in January, 1907, after a very heavy and prolonged fall of snow, some fifty or sixty of these birds, in their winter plumage, visited my garden and greedily fed upon food (bread or animal) thrown out to them. And almost filling, as they did, the grass plot, they formed a very beautiful sight. Some of these birds in their food-hunting would come almost up to the drawing-room window.

VI.

MY CITY GARDEN IN A "CITY OF GARDENS."*

NORWICH has long been known by the designation of a "City of Gardens." How long I know not, but we do know that Evelyn, on his visit to Norwich in 1671, spoke of the "flower gardens in which all the inhabitants excel." He also wrote in his diary that at this visit he went to see Sir Thomas Browne, whose "whole house and garden was a paradise and cabinet of rarities." This garden, I believe, at that time extended from his house in the Market Place (where the late Savings Bank stood) to at least as far as the present Orford Hill, but no portion of it now remains.

It is much to be regretted that so many of the old Norwich gardens have fallen a prey to the requirements or encroachments of the builder; and that where ample space and air for flowers and shrubs, and even trees, formerly existed, there is now nothing but manufactories or houses with small back premises, or at the most, little gardens so surrounded by walls as to be little more than wells, with stagnant air and frequent showers of chimney blacks. Still, in spite of the rapid increase of the city, and the gradual absorption of building spaces, we are

* Read before the Norfolk and Norwich Naturalists' Society, January 30th, 1900, and reprinted from Vol. vii. of the Society's "Transactions."

glad to know that—even in the central parts of the city—some of the old gardens do yet remain, and that they are still able to produce much floral beauty, and in many other ways to contribute to the interest and pleasure of those who are fortunate enough to possess them.

Of course, my present reference is only to gardens situated in the older parts of Norwich. Those who live in our suburbs will doubtless be able to cultivate and utilise their present gardens as the citizens of Norwich did theirs in the “good old times.”

I am glad to say that I (in common with others dwelling in St. Giles’s Street and on St. Giles’s Plain) am still one of the residents in older Norwich with a garden of considerable size. And in my case this advantage is considerably enhanced by the immediate proximity of Chapel Field. For this large open space of seven acres not only provides a great circulation of air, and so a more healthy vegetation, but also—by its numerous and lofty trees—invites a large amount of varied and varying bird-life.

As I have now been a dweller in St. Giles’s for many years, it has occurred to me that a few current notes—however imperfect and superficial—on the capabilities and possibilities of such a central city garden, as illustrated by these, might possibly be an acceptable contribution to the proceedings of this our Norwich “Naturalists’ Society.”

The real object of the paper is to show in a simple way what a large field these home city gardens, according to their size, may still afford for observation and intelligent amusement; and how even in the limited space and depreciated air, which naturally belong to many of them, they yet afford great opportunities for the observation of both vegetable and animal life. The simple grass-plots

themselves, however small, when carefully tended and shaven, are in themselves a constant source of pleasurable satisfaction; whilst the very worms which inhabit them, and the birds which feed on these, afford much room for study of some of nature's methods and instinctive tendencies.

Doubtless the larger space which I possess gives wider opportunities than smaller gardens. But these must be small indeed which do not offer full repayment for observation of the varied life which exists within them, or which may be imported into them.

My garden is about 60 yards in length, by about 26 yards in width. It runs nearly north and south. It has walls of varying height on its several sides. Near to the house these are covered on one side by trained wisteria and white and yellow jessamine, but the greater part of the other portions is covered with ivy. The area of the ground is principally laid with grass, with a broad gravel walk around it.

Under the east wall is a long terraced rockery, well covered with suitable plants; and along the west wall runs a broader bed devoted to very small shrubs and to flowers. The south end, under a stable wall, contains some very ancient and still productive apple trees, also two or three beech trees, and an old pink May-tree, under the shade of which some of the commoner ferns flourish abundantly.

A vinery, and a verandah utilised as a summer conservatory, complete this note of the arrangements of my city garden, and from this brief record it will be seen that an effort has been made to make every use of the available space and of its several possibilities.

I do not propose to detain you with any detailed account of the flowers and plants which can be grown,

or which flourish fairly at the present date in this limited city garden. There are many which are hopeless by reason of the city air and city soil. And I have found the more delicate flowers to be so uncertain as to be scarcely worth the trouble of planting out. Others again fall inevitable victims to the myriads of autumn slugs. But spring bulbs, the autumn hardy flowers, and some annuals, as well as the robuster ferns, do well, and fully repay the trouble of cultivation.

As to ferns, in my former and more open garden higher up the street, I once had as many as forty different varieties growing abroad; but, of course, these, gradually died out, so that at the end of four or five years only the common and hardier sorts remained. Some of these, which were removed, are still very fine specimens, and have lasted in their new home, as such, for many years.

It would have been very interesting had any list or catalogue of Sir Thomas Browne's "paradise" of vegetable rarities been left to us, for a comparison of the possibilities of a city garden two hundred years ago with those of the present day, but none such is known to exist.

I have mentioned the fact that several old apple trees exist in my garden, possibly as old as the house itself, which is understood to have been built 160 or 170 years ago. And I would just mention here that beyond the roof of my stable buildings, and seen conspicuously from my garden, rises—nay, towers up towards the sky, that grand old Aspen-poplar, which is, perhaps, the greatest ornament of the adjacent Chapel Field, though I think scarcely adequately appreciated. This tree has a girth of some 15 feet about a yard above the ground, is 90 to 100 feet high, and was so remarkable even fifty-eight years ago as to have been then pictured by Grigor, in

his "Eastern Arboretum," as one of the most notable trees in this district. In its later state a photographic sketch of it is given in my book on St. Giles's parish, published in 1886, although I fear that this scarcely adequately pictures its grandeur.*

Blomfield states that the great avenue of elm trees in Chapel Field, also partly visible from my garden, was planted in 1746 by Sir Thomas Churchman, who is understood to have then lived in my present house, and who, I believe, then hired the open Chapel Field of the Norwich Corporation. It may be interesting to state here that some three or four years ago one of the largest of that row of elm trees was blown down in a gale. When this tree was sawn across, I took the trouble to count the rings which this section displayed. The outer ones were so thin and irregular that it was not possible to tell their number quite exactly, but as nearly as I could count the total number was between 140 and 150. This number, added to the few which would exist on the young tree when planted, would give a date approximating very closely to that assigned by Blomfield. This is an interesting historical fact, though, perhaps, somewhat irrelevant, and its mention will, I hope, be excused on this ground.

In my own garden the various trees appear to be healthy, but some of them increase very slowly. A small pear tree planted against the ivy-covered wall some twenty years ago is scarcely larger than when planted there, even although it every year sends out a full quantity of fresh green shoots. And a pink thorn tree, transplanted

* A further photographic view of this grand tree is given in the second edition of this book, published in 1906: but before this time the tree had been topped and shorn, and had lost the grandeur and beauty which had made it so remarkable.

into it a few years ago, actually remained perfectly quiescent, as if dead, for a whole year, and then resumed vitality and growth. It is now a vigorous healthy tree, sending forth every year its normal shoots and blossoms.

ANIMAL LIFE.—Such a garden as mine affords a considerable opportunity for observing the ways, and habits, and manners of many *animals*, none of which are uninteresting. Shall I weary you by mentioning the *cats*, which so often make it their playground, and their afternoon as well as their nightly meeting-place? Although I cannot say that *caterwauling* is harmonious, or equivalent to the strains of the bands which so agreeably discourse music in the adjacent Chapel Field on summer evenings, yet there is much of interest, as well as amusement, to be derived from noting the varied yet distinct language, and from watching the very curious customs of the cats themselves, familiar as these may be to all of us. I am favoured with visits of cats of all sizes and all colours—black, grey, cyprus, sandy, grey and white, and almost all intermediate shades. And it is certainly curious to watch the manifestations of their loves and their hates, their friendliness and their jealousies, their sunny enjoyments and their predatory instincts, and their methods of attack and defence. These latter, though often very noisy, by no means necessarily consist in open fighting, but are very commonly carried on by what Mr. C. Morris calls the mentality of latter-day life. These hostile cats (as you have probably observed) will very constantly settle their relative superiority, not by biting and scratching, or actual fighting, but by what is actually a “staring match,” in which the influence of mind over matter is well demonstrated. They place themselves a few feet apart, and stare at each other, until one of them confesses

himself beaten, by slowly backing away from his opponent, and then suddenly turning round and running away. This is a form of duelling which might well be copied in human life; and, still more, might properly be adopted in the case of nations, where "mental" arbitration, from a steady calculation of strength, would take the place of bullets and bayonets.

As with Cats, so with *Sparrows*; it may be said that they are constant friends that are always with us. Yet, though so common, they are a never failing source of interest in a city garden, if only because they always provide some conspicuous life and motion; and in mine, because they may nearly always be heard chirping or quarrelling in the ivy, which covers so much of the garden walls.

I am sorry that Miss Ormerod gives them such a bad character as to their appetites. But not being personally engaged in agriculture, I can only rejoice that nature has provided them with such strong constitutions, and healthy and active digestions. Beyond this, it is certainly a pleasure to a townsman to note their chatterings, their amicable, if noisy, contentions for the best places in the ivy, their demonstrative courtships, their dust-baths in the dry ground, or their water-baths in the pans provided for them for this purpose, and their evident love for the neighbourhood and companionship (at a properly regulated distance) of mankind.

What a contrast there is between the active, fluttering, often noisy *House Sparrow*, and its quiet, retiring, and gentle-mannered neighbour, the *Hedge Sparrow*.

This was well illustrated in the early part of last December, in this way; the Hedge Sparrow (or Dunnock or Accentor) does not often visit my garden, but one of these pretty birds did come at this time, and having

incautiously entered the open door of my greenhouse, got shut up in it. Next morning, on my entering, it was, of course, somewhat frightened. But instead of violently fluttering about, and dashing itself against the window, as the House Sparrow will do in like circumstances, it very quietly and gently flew away from me, and then at once dropped down behind the brick flue, where it remained quiet and concealed, in spite of my efforts to find it, as I desired to do in order to give it its liberty. The same thing exactly happened on some following mornings; and being fed regularly, it has remained there to the present time, *i.e.* the date of this paper.

There are plenty of other birds whose visits and whose peculiarities would provide abundant material for a paper much longer than I can venture now to inflict upon you. But they are all welcome for the sake of the varieties of life and habits they present—as well as for what Tennyson so prettily describes as their “singing and calling.”

My grass-plot is the feeding-ground of the greedy and quarrelsome *Starlings*, which will often come for their meal of worms or other food at quite regular hours, usually at ten or eleven o'clock in the morning, and three to four in the afternoon. And occasionally the *Jackdaws*, from our neighbouring church-steeple, where they live and breed, will venture—most carefully and cautiously—to alight on the grass in search of food. Whilst even the Norwich *Rooks* will, when hard pressed in bad weather, occasionally dart down from a tree for crusts of bread or other edible matter obtainable in the garden.

Thrushes and *Blackbirds* are chiefly in evidence during the nesting season; and it is noticeable how tame or

rather incautious they appear to become during this period. It would almost seem as if the sitting process produced in them (as has been noted of other birds) a dullness or partial stupor of intelligence. Whilst after hatching, the urgent and continuous calls of their young ones for food evidently renders their desire to satisfy these imperative and destructive of prudence. This very year a full-grown Blackbird ventured along the grass in search of worms almost up to the house verandah, in which, unfortunately, a cat lay basking; and, as a matter of course, the bird was instantly pounced upon. She escaped, however, almost by a miracle, but she left nearly the whole of her feathers behind her, and almost in a state of nudity.

It is curious to observe how the Blackbirds and Thrushes will not only provide worm-food for their nestlings, but how they will prepare these worms and make them fit for swallowing down the young throats. They will often, when they have tugged a worm out of the grass, proceed to peck it into small and suitable lengths, and will then carry these, arranged in their mouths in suitable bundles, to the nest.

Blackbirds appear not to gain knowledge by experience, at least in some particulars. I witness almost every year a repetition of what I may term "the tragedy of the Blackbirds." Evidently the same old birds will yearly build a nest in almost the same portion of the ivy on one of the walls, and not more than six or seven feet from the ground. Well, this is all right so long as the old birds are merely sitting and make no noise, so as to attract feline attention. But as soon as the young birds are hatched, and begin to make vocal demonstrations, of course they fall victims to their natural enemies and "bird-fanciers," and the nests

and their occupants are ruthlessly dragged out from their positions and destroyed. This occurs year after year. I believe that then the birds will sometimes build again elsewhere. But they certainly return to almost the same locality in the following spring, and their offspring again become victims of the inappropriateness of their selected homes.

Plenty of other birds also come to the garden at various times and seasons, and add to its life and interest—*Robins*, *Bluetits*, *Nuthatches*, *Redwings*, *Misselthrushes*, and others—but of their behaviour in the winter season, and when habitually fed, I have already discoursed to this Society, so will not further trouble you now with their noticeable peculiarities.

REPTILES.—Perhaps it would scarcely be expected that the *Reptile* race would provide much of interest for a city garden. Yet it may be truly said that this class of creatures has done almost more than any other to provide my garden with material for this.

As this Society will know from my previous communications to its "Transactions," I have long kept two TORTOISES, and year by year noted their habits and most remarkable peculiarities. These have been already fully described in the Society's records, and I can only now add to what I before stated, that they still continue to increase in size and weight, and at about the same rate of progression as twelve or thirteen years ago. They still gain $1\frac{1}{2}$ to 2 ounces in weight in each summer, and lose about 1 or $1\frac{1}{4}$ ounce in weight during each winter hybernation. The total result is, that whilst they weighed respectively 2 lbs. 10 ozs. and 2 lbs. 5 ozs. in September, 1886, they weighed in October last 3 lbs. 13 ozs. and 3 lbs. 8 ozs., having thus each gained in weight during this period 1 lb. 3 ozs., or on an average about one ounce and a quarter in each year.

Other reptilians which I have tried to domesticate (for observation) in my garden are TOADS and FROGS. But I am bound to say that I have not been successful in preserving them in any numbers for more than a brief period. Their appearance and disappearance has at times been very mysterious and inexplicable, but on the whole those which I have imported have, as a rule, soon either died or been otherwise disposed of. Is it not probable, I would suggest, that they, or at least the smaller ones, have fallen a prey to Jackdaws, Rooks, or even Starlings?

Of the *Frogs* which I brought home, only one survived the second year. But this one appeared to thrive in a remarkable degree for several years. It would apparently lie dormant for many months, and would then reappear, lively, fat, and much grown, for a few weeks in the late summer or early autumn; after which he would be no more seen until the following year.

Toads are more interesting than Frogs; and, indeed, in a city garden, by no means produce that feeling of loathing which is popularly supposed to be inherent in them. On the contrary, they quickly become tame, and almost assume the *status* of garden pets. And as a matter of fact, I entirely disagree with Shakespeare, who calls them "ugly and venomous."

At first the Toads which I imported would come out regularly on suitable evenings, and sit or hop about on the damp grass or flower-borders. And they exhibited a most special tendency (as has been observed by others) to come down to the house as if desiring an entrance. Indeed, when the door was open they would not unfrequently walk in. And I have more than once found one of them in my study or other room, sitting up in a corner, looking happy and comfortable, and

quietly staring at me with its bright eyes, as if I were the real intruder.

The direction of my rooms from the garden is from south to north. I do not know if this was possibly expressive of any migratory instinct.

Like the Frogs, of a number of Toads which I introduced into my garden, only three or four remained in the following year; and soon all disappeared, except one, whose end was peculiar and of dramatic interest. It occurred in this way: A neighbour kept in his adjacent garden some other reptiles, namely, some non-poisonous snakes. One of these seems to have escaped from its cage and got over the dividing wall into my garden, and on one summer morning was discovered by me on my grass-plot, with this Toad (about a half-grown one) in his mouth, which he was trying to kill or swallow. I suppose the Toad was too large or too lively, for the snake was making very serious exertions, and was actively agitating its body in a linear direction. When seen at a distance, it looked like a stout piece of cord or fine rope agitated by the wind, with a movement like that of a carpet when it is flapped and shaken. The Toad had been seized by the hinder part of its back, as shown by the two bleeding punctures afterwards found.

When the snake saw me advancing towards it, it rapidly wriggled or undulated away towards the ivy-covered wall, where it was lost. But it retained its hold of the Toad almost to the last, and until I had got quite close up to it.

This incident is not only interesting, but it also shows that these reptiles must have some instinctive power of knowing of the neighbourhood of comparatively distant prey; for the rockery stones from which it was taken

must have been at least thirty to forty yards from its own domicile. Such an instinct would seem to be the equivalent of that well known to be possessed by birds of prey. I regret that this poor Toad did not long survive his fright and bad usage.

My Toads have exhibited the usual tendency of these animals to hide away beneath stones or earth, and in unfrequented corners. When discovered it is curious to watch their half-frightened expression, and their peculiar mode of breathing by their under jaw, which appears at once to increase in rapidity. They do not resist much when handled, but it is curious to note how they continue to swell their sides out, until they produce a very prominent rotundity of their body. After the episode of the Snake and my Toad, the idea suggests itself that this is intended to make themselves as large as possible, not from envy of the Ox, as stated in the fable with reference to the Frog, but to make themselves too large a morsel to be swallowed by the lesser of those animals which prey upon them.

These "Toads in holes" would come out from their retreat in dry weather, a few hours *before* rain, after which they would again disappear, often for a long season.

INSECTS.—There are plenty of these in every garden, however small; and Bees, Flies, Beetles, and especially Spiders, would afford a never ending source of interest. The only insects which I have specially watched are ANTS, nests and colonies of which appear and reappear every summer upon my garden paths, or upon the adjacent portions of the grass-plots.

We all know of the very numerous observers of and writers upon these little creatures; and their works, from Huber down to Sir John Lubbock, will be more

or less familiar to us all. Their industry, their building powers, their gregarious nature, their division of labour, their apparent working for the common good, their devotion to the young, their colonizing instincts, as well as some of the changes which their insect forms undergo, are all there recorded.

And many of these things are easily to be observed by anyone who takes the trouble.

I can only venture here to make one or two brief notes on their proceedings in St. Giles's Street.

Both the small brown and the small black Ants are to be here seen, but they occupy different positions; and not only do not seem to be on neighbourly terms with each other, but fight at once if experimentally placed together.

The brown Ants are the more numerous, and in the summer months display an enormous amount of activity. Doubtless there is a good reason for their incessant movements, but to the ordinary observer these often seem to be purposeless and merely the result of restlessness and excess of energy.

The favourite situation for their little Ant-hills is decidedly along the edge of the gravel path, where this abuts upon the grass sward, and it is noticeable that almost the whole of these are placed on the easterly edge of this. From these nests, or centres, very little use is made of the adjacent grass territory, but from nearly all a track is made across the gravel path to its opposite (westerly) side, where either a hole is made into a small fresh home, or a semi-tunnel is made through the grass edging on to and into the earth of the flower-border beyond. There appears to be no attempt to tunnel in the firm gravel path, but the incessant racing backward and forward in the same

line very soon (as Sir John Lubbock, now Lord Avebury, has pointed out) makes a well-trodden road, along which they follow each other in rapid succession.

As to their hour of rising in the morning for work, I cannot speak from personal observation. But as Solomon holds them out as an example to those inclined unduly to keep their beds, I conclude that their motto is, "Early to rise." But I can say that the opposite half of this proverb, namely, "Early to bed," does not apply to them, for, at least in the warm weather, they do certainly often work until late at night.

It is very interesting to watch these Ants at work, and to note their activity and energy and strength. An Ant is "but a little creature," but he is certainly able to perform a large amount of physical work. And especially is this seen in the way he builds up those little heaps of earth known as Ant-hills. I have had many of these under observation, and the rapidity with which they reappear after injury by pressure or a heavy rain-storm is very remarkable. Twenty-four hours, or even less, being often sufficient for their complete restoration. They are of varying form, but some are perfectly conical, with a circular hole at the top exactly like that of some Norfolk "kilns" used for the burning of bricks. Others are irregular, or flattened and spongy, with several holes. But it would seem that the varying shapes are largely due to the special conditions under which they are made.

* 1907. I have noted that this year the brown Ants have varied in colour, or have been replaced in their more usual spots on my gravel walk by others that are nearly if not quite black. And I have also noticed that their habits are somewhat different. The little conical Ant-hills which they make are much smaller, but more numerous, than those of their predecessors, and they seem to burrow more in the

adjacent grass lawn. But they keep to almost the same spots. In their daily workings and activities also there is a decided difference. They are very active in the early mornings, but often can scarcely be seen all the mid-day or afternoon, instead of racing about above ground almost the whole day, as the others did. But they may have been influenced in this by the continued cool and showery weather of the season.

One very warm day about noon, in the early part of September, I witnessed some of the proceedings at one of the well-known "wedding ceremonials" of Ants. The whole body of the Ants were swarming on the grass above the nest, and racing about in evidently a great state of excitement. Amongst these were five large winged (Queen) Ants, constantly moving about, though more quietly, and in and out of the nest opening. Also in the group were some forty or more smaller winged (Male) Ants, also moving about upon the ground. None of the winged Ants were flying far about. I watched this state of commotion for some time, then left, and returned in about an hour, when the whole body of these insects had disappeared, presumably into the nest. Whether the brides and bridegrooms were about to take their wedding flight, or whether (as appears most probable) they had just returned, I am unable to state; but I saw no further commotion outside later on in the day.

I have often watched these little creatures at work upon their "heaps," and have noted how these are gradually built up of aggregations of single grains of earth or sand, which evidently have been dug out grain by grain from the earth, where the excavation is going on, and are then brought in the Ant's mouth to the surface, and to the top of the rising earth-heap. They are then dropped over its edge, and the Carrier Ant at once races back into the hole presumably for a fresh burden. This process is a very remarkable one, and the way the Ant brings his grain of earth in his mouth and drops it over the edge of the rising Ant-hill, irresistibly reminds one of a railway navvy who wheels his barrow full of earth and tilts it over the edge of the embankment upon which he is at work. The number of single grains in even a small Ant-heap must be very large, and must amount to many

thousands, or perhaps to hundreds of thousands. What, then, must be the untiring energy of a small Ant colony, which can reproduce such a granular heap in less than twenty-four hours?

It does not always seem clear what the streams of Ants from the parent nest are so constantly occupied in. They may be, to a certain extent, colonizers, but they certainly do not, with me, raise secondary Ant-hills to any great extent at the end of their runs. They make holes in the ground there, and possibly they may be engaged in their proverbial custom of securing and storing up food for the winter. To the uninstructed eye these holes look very much like Colonial outposts.

The activity of these Ants entirely ceases with the advent of autumn, and their Ant-hills in my garden entirely disappear until the following season.

As we all know, this instinct of storing up food for winter use has been largely denied, but from Sir John Lubbock's account it certainly exists in some species, though its extent varies greatly. As he says that many of the Ants live through the winter, some food would seem to be required.

Speaking of Ants generically, we all doubtless accept King Solomon's authority upon this point, and we shall not forget that the Roman poet, Virgil, writing just before the Christian era, expressed himself to the same effect.

"Ac veluti ingentem formicæ farris acervum
Cum populant, hyemis memores, tectoque reponunt."

Whilst Cicero says:

"In formica non modo sensus, sed etiam mens, ratio, memoria."

Lastly, did time and inclination permit, I might have found endless interest in observing the habits of the vast quantities of WORMS (again with the aid of Sir John Lubbock) which inhabit my grass-plot ; or those of the SNAILS ; or of the SLUGS, which exist in equally innumerable quantities in the garden soil. Both these latter classes of animals appear to be made to be eaten, as they largely furnish food for the birds. They prefer damp or wet weather, and to some degree are excellent weather-glasses or weather prophets. As we all know, they roam or sail about on rainy evenings. But it is curious to observe also the special instinct by which in dry periods the Snails will become aware of watered or damp earth at a considerable distance, and how they will in the night cross a large breadth of dry, or even dusty earth, to reach a spot of ground where plants have been watered on the previous evening. I need scarcely remind you that these land mollusks, the Snails, and still more the Slugs, are creatures with super-excellent appetites for the garden plants.

I have now, in conclusion, not only to apologize to this Society for the length of my paper, but, perhaps, also for having brought it before you at all.

I did not venture to do so until I had asked our excellent and experienced Secretary whether he considered that a few such popular or surface notes, even if containing little that is new, would be acceptable, or even appropriate, to such a learned body. My real object has been less to state what I have personally observed than to show what a large field still exists in our city centres (as indeed everywhere) for a naturalistic use of whatever out-door opportunities are present ; and to illustrate the principle that even in the

smallest and least promising city gardens or spaces, the materials for interest and self-instruction are ever present, and practically inexhaustible; that here, as elsewhere, and everywhere, we may "read, and read again, and still find something new; something to please, and something to instruct."

VII.

PRESIDENT'S ADDRESS.*

LADIES AND GENTLEMEN—Another of our Society's years has come to a close this day, and it devolves upon me to say a few final words before yielding up this presidential chair. In doing so, my chief desire is to repeat my thanks to the members for having placed me in so honourable a position, and for their kindness in sustaining me throughout the various evening meetings of the session.

It is a matter of much congratulation that these meetings have continued to be well attended, and that the Society itself has continued thoroughly to fill that position of scientific usefulness which was hoped for it at its first inauguration, now eighteen years ago. Such a lapse of time gives the opportunity of seeing how much good work has in the aggregate been done. And though, no doubt, in looking back through our volumes it will be found that different years have produced a varying amount of work judged by its importance, yet on the average we have reason to be well satisfied with what the successive numbers show us, seeing that the total represents a very

* Read by the President, to the Members of the Norfolk and Norwich Naturalists' Society, at their Eighteenth Annual Meeting, held at the Norfolk and Norwich Museum, March 29th, 1887.—Reprinted from Volume iv. of the Society's "Transactions."

important collection indeed of natural history facts and information. The work of the present year has, I think, fully maintained the good average attained in other sessions.

The Society too, has, as a whole, continued to prosper, and appears to be effectually carrying out the initial programme set forth on the first page of each volume of its "Transactions."

On looking back to some of our earliest annual reports, I find that our numbers have doubled and trebled themselves since that time; and further that the list now embraces the names of many both at home and afar off, whose reputations are well known to science, and who are powerful additions to our Society's strength. As compared, too, with those earlier times, the increased plumpness of our yearly volume tells of the greater amount of matter that is now every year contributed.

So, too, if prosperous finance is any test of success, we may look to the larger figures in our balance sheet, and the sufficiently satisfactory state of our "balance at the bank" further to fortify the favourable position which I desire to point out to you.

We have had an accession of twenty-one new members during the year, whilst seventeen have been removed by death, resignation, or other causes. But though the total losses from these causes have been but few, and those from death not above the average, yet these latter include some well-known names—the names of members of valued attainments, and of men whom the Society could ill spare.

Especially do we note with regret the premature loss, in only middle life, of one who had been a member of this Society from its commencement, who was also a life member of the Zoological Society, and whose death would

have claimed attention from us as Norwich men, were it for no other reason than that he bore a name the very sound of which is instinct with ideas of Norfolk Natural History ; one who was also a member of a family to which this Society, and the neighbouring Museum, owe a long and ever-increasing debt of gratitude.

Although the late Mr. John Gurney's talents were never, I believe, especially directed to our class of study, yet his tastes for the bright and the beautiful were well known. And though his affliction had of late years debarred him from the complete visual enjoyment of the beauties of nature, yet his devotion to the improvement of the rural charms of his own home, and his public-spirited expenditure upon the scheme for the laying out of Mousehold Heath, and its appropriate development, showed that he had in him that form of mind out of which the true lover of nature's creatures, as well as nature's charms, necessarily arises.

But this side of Mr. Gurney's mind will come home to us as naturalists much more forcibly when we recall the great act of his life, in which he was so heartily and so earnestly engaged when death removed him so suddenly in the midst of his useful and public-spirited career. I, of course, allude to his great Castle-Museum scheme for the removal of our grand Museum collection, with its surroundings, to a new and larger and more appropriate position on the Castle Hill. We all know the generous liberality with which he sought to ensure this grand scheme being carried out. We have all noted the quiet and business-like sagacity with which the various steps necessary for the effective doing of this work were taken under his inspiration. And I am sure we recognise how he was actuated not only by a desire to raise the scientific *status* of the county and city generally, but also to assist those

Norfolk workers in nature's fields whose accumulated results are now to be seen under this roof.

His large and increasing views for the good of this city, and its general welfare, have been so thoroughly and so publicly appreciated on all sides, that it is not necessary for me to add one word more. His name will remain as that of a public man at once generous and right-minded. And I can only hope on behalf of this Society, and that of other kindred ones, that nothing will occur to prevent the full development and carrying out of that Castle scheme, which, if effected, will, in my opinion, have a large and important influence not only upon the future scientific progress of Norfolk generally, but also upon the intellectual position which our famous old city will hold in the time to come.

Mr. Hampden G. Glasspoole, who has also recently died, had been a member of this Society from its commencement, and had contributed two papers to its proceedings. These were entitled "Biographical Memoirs of some Norwich Botanists," and "Memoir of Lilly Wigg." He had also published several papers in *Science Gossip*. He was for several years a member of the late Norwich Microscopical Society; and of the London Quekett Club.

Mr. Glasspoole was an accomplished botanist. For many of the later years of his residence at Ormesby, he was honorary curator of Botany at the Norwich Museum; and after his removal to London he held, for a short period, the office of botanist to the Alexandra Palace.

He will be remembered by us all as kindly, gentle, and genial; ever ready to help others with his time or his knowledge; and with all his stores of information, modest and unassuming.

He added one species to the British Flora, *Carex trinervis*, Devgl; and two species to our county list, namely, *Ammophila Baltica*, Leak, and *Sparganium neglectum*, Beeby.

As is well known, he was the eldest son of the late Capt. R. Glasspoole of Ormesby, who had himself presented many *curios* to our Museum, and who published a most interesting account of his experiences whilst a prisoner in the hands of Chinese pirates.

The Ornithology of Scotland has, in the death of Mr. Robert Gray, which took place at Edinburgh in February last, lost one of its ablest exponents. Commencing with "The Birds of Ayrshire and Wigtonshire," which appeared in 1869, Mr. Gray, two years later, published the more important "Birds of the West of Scotland," and at the time of his death was engaged on a similar work treating of the birds of the Eastern district of his native country. In this latter work he was, I believe, associated with Mr. William Evans of Edinburgh, who, it is to be hoped, will bring their joint labours to a successful issue.

Mr. Gray commenced public life in the City of Glasgow Bank, and it was whilst acting as Inspector of Agencies for that establishment that he was enabled to collect the information which so enriched his work on the "Birds of the West of Scotland." Subsequently Mr. Gray entered the Bank of Scotland, and at the time of his death occupied the position of its chief cashier. Since his residence in Edinburgh, he has taken a prominent position in the scientific institutions of that city, and was a Vice-President of the Royal Society of Edinburgh, and Secretary of the Royal Physical Society. He did not become a member of our Society until 1884, but has been long known by several of its members, and highly valued as a correspondent or friend.

The only other member of this Society whose death we have to deplore is Captain Philip Hamond, who has for some time left this city, but who will be well remembered as having resided for awhile at Mousehold House, Thorpe. He showed much interest in the natural history of Norfolk, and also in its antiquities; and he left a valuable collection of books relating to Norfolk.

During the past session we have had many valued *papers* contributed to our Society; besides some notes—shorter, but not necessarily less interesting, or of less value.

We have also had several specimens exhibited. And, in addition, we have had a considerable number of members who have taken part in the various discussions.

I need scarcely remind you how varied these contributions have been; and how birds, beasts, fishes, insects, and smaller creatures; as well as seeds and plants, great and small; have all received illustrations during the year. Distant parts of the globe, too, have helped to supply us with the material which has been brought before us, notably by our late President, Colonel Feilden.

Many of the papers will be published in the forthcoming “Transactions” of the Society; and to these I need scarcely allude, as they can all be read by us very shortly. But I should scarcely like to omit to mention the beautiful botanical specimens exhibited by Mr. Long, of Wells, at our last meeting. The rarity and interest of some of them, the beauty and finish of the mountings, and the true scientific intelligence displayed in all, can but make us desire that so competent a collector would not only further explore his district, but also enrich this Society by the exhibition of the fruit of his researches.

As to the contributions which will not appear in our “Transactions”:—At the May meeting, Mr. F. Sutton read some interesting notes on Strawberry growing. In October,

Mr. Southwell read extracts from the records of the Whaling s.s. "Eclipse" in the Greenland seas. Mr. Southwell's notes referred more particularly to the natural history occurrences of the voyage; the birds and animals met with. And he exhibited several forms of Whale and Seal food, consisting of Crustacea and various minute organisms; as well as the skulls of two Greenland Seals, two Ringed Seals, and a Polar Bear, sent him by Mr. Robert Gray—all which latter he has presented to the Norwich Museum. He also exhibited a very rare little fish of the genus *Scopelus*, likewise taken by Mr. Gray.

At the same meeting, our most valued and efficient member, Mr. Geldart, read a paper on the *Calanus finmarchicus* or Rice Food of Whales, from the West Coast of Spitzbergen, and illustrated by it the natural law of gradation in feeding, showing that whilst some Whales themselves eat this food, others devour the Cod and Herring, which eat these little crustaceans, which again eat the diatoms, found floating in such enormous numbers on the surface of those seas.

My own humble contribution to the proceedings of our last meeting, in the shape of a paper on the habits of some of our town birds, entitled "My Christmas Garden Party," has been recently published in *extenso*, and therefore need not be further alluded to here.

There has been only one *Excursion* made during the year, but this appears to have been full of interest and enjoyment. I have received a lively and detailed account of the day's proceedings from Mr. Bussey, but I regret that time only permits me to note the principal features of the occasion.

The visit was made to the Salhouse and Wroxham Broads, and the neighbouring district, including the Broomhills, St. Benedict's Abbey, and portions of the

river Bure. • It is unnecessary to say how ample is the material in this district for the study of both the animal and vegetable kingdom; and as the day was fine, the opportunities afforded were fully availed of. As usual, this occasion for field study fully repaid those who took part in it, for their devotion of the day to this pleasant combination of research and recreation.

The field over which "Natural History" extends is a very wide one, and properly includes the study of all organised beings, living and dead. At one end the ground is, to a very considerable extent, occupied by the Geological Society, which exists in Norwich; yet even in this department we have had, as I have said, some very valuable contributions during the year. But at the other end, which embraces the study of minute or microscopic life, not only have we had no contributions during the past session, but I find, on looking over the past numbers of our "Transactions," that the papers dealing with this part of the world's life have been both few and far between. There have been, as we know, some great and valuable exceptions, such as the papers read by Mr. Kitton, the address by Mr. Plowright, a portion of the address read by the President, Mr. Sutton, two years ago, and, perhaps, one or two others. Still the small part which microscopical records and observations play in our annals is both noticeable and regrettable—the more so, because in consequence of the decease of the old Norwich Microscopical Society, I believe that no public or systematic work in this direction is now being carried on in this city. And yet, partly in consequence of the larger forms of life having now been so largely studied, but still more in consequence of the new views as to the universality and far-reaching importance of microscopic living beings—there is probably no phase of natural history which is now more engaging general

attention, or which is being more eagerly studied and investigated elsewhere.

Mr. Sutton, in his presidential address of 1884-85, gave a most learned and interesting description of some of the microscopical researches which had been carried on up to that time, and further gave us a most lucid account of the influence which micro-organisms had been shown to exert in the process of nitrification in soils, an influence which had formerly been considered to be due to purely chemical action.*

I trust I may be forgiven if I recall your attention for a few moments to this subject of Germ life, more particularly as it branches out and develops in a more vital direction ; in other words as it affects human and animal life.

This portion of the subject has, during the past two or three years, deepened and strengthened in interest ; our knowledge of it has largely increased ; and the recognition of its vital importance has called forth, both in Europe and America, a host of eager and capable workers. It is scarcely too much to say that its wide and far-reaching issues are probably the most important to mankind of any that have been studied in recent times. Foremost amongst the workers in this department may be recalled to you the well-known names of Koch and Pasteur, abroad ; and of Lister, Watson-Cheyne, and Crookshank, in this country. But the names of other eminent investigators will almost necessarily occur to your minds.

* It is now known that the nodules found upon certain growing plants are caused by germ growth, with the production of Nitrates and thereby a fertilization of the soil. And it is worth noting that at the present time (1908) it is being endeavoured to utilise this knowledge of aerial nitrification by certain plants, by artificially applying a liquid preparation of the germs which are the active agents in the process to the seeds of these plants or to the growing crops. The results of such applications, so far, are alleged to be effective and commercially advantageous.

It has long been known what potent factors were microscopic Germs in producing changes in the constitution of decaying matter; and how they were, in all probability, the useful scavengers of nature, definitely resolving into their constituent elements failing and dying organic tissues. But it has become more and more a matter of knowledge, that by their parasitic habits and their power of invading and living upon and within other living tissues, they are also the sources of many so-called diseases of both vegetables and animals.

With regard to vegetable parasitic growth I will not now detain you. The blights, and the mildews, and the ergots, as well as minuter forms, such as algæ and micrococci, are well known; and no doubt much more is still to be learned from their further investigation; whilst by analogy it seems highly probable that the circulating fluids of higher members of the vegetable kingdom may be found to be invaded by parasitic beings in the same way as their animal compeers.

But it is to Germ life in animal bodies that I wish now specially to allude. I have said that our knowledge in this direction has, even in the last two or three years, made enormous strides, and it is now almost a matter of certainty that all contagious or infectious disorders, as well as many others, are but the expression of the fact that minute living bodies have made a resting-place for themselves in or upon other living tissues; and that the development of the phenomena of these morbid states is but an indication of their presence and reproductive activity—either as cause, or as an accompaniment of these disease manifestations. And this applies not only to the human species, but to lower classes of animals, between whom and man many of these diseases are interchangeable.

Such knowledge necessarily invests the life history of

these minute Germs with intense interest, seeing that it is probably one step, and that a long one, towards the discovery of the means of prevention, if not also of cure, of many of our most fatal and dreaded diseases.

Examples of such diseases are:—Scarlet Fever, Diphtheria, Small Pox, Cholera, Yellow Fever, Tuberculous Disease, Ague, Hydrophobia, Cattle Plague, Anthrax; and many others might be enumerated whose dependence upon parasitic Germs is almost conclusively proved. But these are sufficient to show the deep interest of this branch of study.

Not only are these Germs found in the solids of the body in some of these diseases, but in others their presence is easily and constantly recognisable in the blood or other fluids, and even within the corpuscles which the blood so largely contains. And not only so, but the forms which these micro-organisms present are so constant and so definite in the different disorders, that it is now almost possible in some instances to diagnose what diseased condition we have to deal with by an examination of the fluid or tissue in which they are contained.

It is, perhaps, but right here to say that some of our most cautious observers consider that it is as yet hardly *proven* that the differing Germs found in the various diseases are their actual and efficient cause; but their definiteness in the various disorders, and the constancy of their presence, leave little doubt that this will hereafter be conclusively shown to be the case.

Some of these Germs seem to have a short life and rapid development, and then we have acute disease. Others seem to have a more prolonged or continuing career, and then we have chronic disease. Whilst others seem to have an intermitting development, and then we have paroxysmal disease.

Many curious facts have been observed in reference to the forms, or multiplication, or life-history of some of these parasitic beings. Thus, for example, in one class (*Filaria sanguinis*) it was noticed that the minute embryos of this little blood-worm could only be discovered in the evening or during the night, and not during the day; and the reason of this has appeared to be that it is necessary that they should come within reach of the Mosquito Gnat, which is a night-feeding animal, in whose bodies one stage of their development appears to take place.

One of the latest discoveries in this department of natural history is that of the blood germs, which co-exist with the various forms of ague and malarious disease, and upon which they would appear to depend. Dr. Osler, of Pennsylvania (now Regius Professor of Medicine, at Oxford), has recently described and figured these little bodies in an elaborate paper full of interest.

Such facts as these, when regarded merely from the point of view of a member of the Medical Profession have their deep and *special* significance. But I am here to-night as a member of the Naturalists' Society, and by all of us, in that capacity, they are first to be regarded, not as illustrations of disease, but of the life history of some of nature's creations—creations which are no doubt as important, as definite, and which play as large a part in the general scheme of life, as do many of the larger forms of animated beings.

Some of these little bodies, especially those of the bacillary and bacterial class, are extremely minute, and are best examined with powers ranging from one-tenth to one-twenty-fifth of an inch; and it is impossible to ignore the fact that their study requires not only good instruments, but much patience and skilled attention. Nevertheless, such study fairly comes within the scope

of this Society's work, and will most certainly repay any of its members who may be induced adequately to undertake it.

Nor let it be said that minuteness is any reason for lack of interest on the part of the naturalist. For many of these micro-organisms have already been shown to be as varied, and to have as definite a structure, and as special a life history, as any of the larger types of beings; whilst, of course, we all recognise that apparent size is as nothing, that it is a mere accident, a question of the construction of our enquiring eyes, a condition that is at once altered and rectified by a magnifying glass.

If it be true that the invasion and presence of various small organisms in the blood or tissues is the cause of the various specific diseases to which I have alluded, then the application of such knowledge as naturalists can obtain, as to the food and other conditions necessary to their existence; their mode of ingress to the body; their development and multiplication, becomes clear and obvious. It opens up to our minds possibilities both of prevention, and of either mitigation or cure. For it is evident that if we can starve these Germs of their necessary nutriment, or make their new habitation unsuitable for their healthy and vigorous development, their career as invaders will necessarily either be cut short, or be rendered feeble and impotent; and therefore the disease-changes which they can produce less violent and less lethal.

Something of this kind appears naturally to have taken place in those persons in whom some of the zymotic diseases (of which Measles, Scarlet Fever, Whooping Cough, &c., may be taken as familiar types) have once run their course; in those, that is, who are popularly said to have already had these diseases. And although the

exact abiding change which is produced has not been ascertained, yet it is well known, and quite understood, to be one which renders the fluids or tissues partially or wholly unsuitable for their future healthy growth.

This theory, too, is the well-known explanation of the protective power of the Cow Pox, which once having permeated a human system, has rendered it unsuitable for the future healthy and vigorous development of its greater relation—the Small Pox.

In default of available means of destroying the Germs of other malignant diseases, prolonged efforts have been made (and notably by the great French pathologist, Pasteur) so to diminish the intensity of the destructive force of some of these specific Germs, that they may be safely inoculated into human bodies without danger to life, and yet be potent enough in their effects to anticipate and render abortive the invasion of the more virulent diseases. This has been attempted by repeated cultivations of the Germs in proper media, until after several of such generations the broods shall have acquired the requisite diminished vitality—in fact, until that diminution of virulence which the Small Pox Germ has sustained in passing through the Cow has been obtained by these artificial means.

We are all familiar with the attempts which have recently been made by Pasteur in this direction, in regard to that most fatal disease Hydrophobia. It remains to be seen how far he has been successful in solving this preventive problem; and how far this may be the true method by which to utilize our knowledge of bacterial life. Medical men are diligently working at this subject from their own point of view. There is much to be done by microscopic naturalists in unravelling the life-history of these little beings; and we are glad to

recognise the kind of results which may be hoped for in the future.

Such considerations as these are fraught with matter for deep reflection, and tend to open our minds to the far-reaching possibilities not only of this special knowledge, but of that which we are gaining in many other branches of science. Each fresh item of knowledge is like a new step upon a ladder, and raises us to a fresh height from which we can take a wider survey, and which we can assume as a loftier and broader basis for further enquiry. Scientific thought is ever as to what may next be done, and how to do it. For, as Sir James Paget has recently said: "Every increase of knowledge brings before us a larger and clearer view of the immeasurable quantity which is still to be gained. The more we know, the more can we see, if we will, how much more there is that we do not know." And of this we may be sure, that it is by minute and exact work only that in the future our store of knowledge is to be increased and made sure. If no other example to prove this were at hand, it would be sufficient to quote the recent observations of the Rev. Dr. Dallinger on the subject of the conjugation of the nuclei of some minute forms of cell life: observations which bring us nearer to some definite knowledge of this particular matter than any hitherto made upon higher classes of creatures.

Dr. Dallinger has spoken of the "vast area of activity and research in this direction;" and Professor Huxley has said, "that those who have toiled for the advancement of science are in a fair way of being overwhelmed by the realisation of their wishes."

We appear indeed to be still only on the threshold of knowledge, to have merely touched the fringe of the vast and infinite life-history which the living world, that

inexhaustible stream of life which we see everywhere around us, contains. We are proud of the amount of our natural history knowledge. We think to have accumulated a large store of information as to that especially of our own district. We can point to the lists of animals and plants which the research of the members of our Society, and others, has so laboriously gathered together. And we can look to the stores of our Museum as illustrations of what has been done. And yet a little further consideration at once shows us how small a part this is of what is yet to be known. We know the gross form of the specimens ; we know something of their habits during life ; and yet how little is this of what there is to be known about them. Who is there of the most learned who can properly explain the meaning of one hundredth part of what these creatures present in form, size, colour, and intimate structure? We have a general idea that their special peculiarities have relation to the two primary essentials of life—the daily bread, and the perpetuation of the species—but we are largely unable to explain the *raison d'être* of many of the commonest facts which they present. It will be a great day when we can also explain the object or utility of all the variations which they present.

Of course I do not forget the powerful impulse given by the researches of Darwin in the direction of explaining the why and the wherefore. I only indicate how large a portion of this explanatory field is yet untilled.

In this county a Naturalists' Society will never lack either for material to work on, or for variety and interest of subject. Much, even in its grosser form, still remains to be learned. And the vast variety presented by the county, in respect of climate, soils, strata, heath, woodland, marsh, stagnant and running water, as well as the proximity

of the great ocean with its shore—presents an almost unexampled field for the work of the scientific naturalist—a field, too, which is constantly changing in accordance with the physical and other changes steadily going on in the district.

With these great natural advantages, and with the great love for natural science, which is inherent in Norfolk men, I make bold to hope and prognosticate for this Society a prolonged and continuously useful career. We are glad to see its library growing, and its journalistic interchanges increasing. We are glad of the increasing importance of the position which it holds amongst kindred societies. We are all, I am sure, looking forward to the time when this, our Society, will meet in a handsome airy room on the top of the Castle Hill;* when any student of any particular branch of this natural history will be able (on repairing to our Museum) to see not merely inaccessible specimens ranged three or four deep, but so displayed as to be available for study and examination; when lectures and demonstrations will be possible, because there will be sufficient room space to contain both the lecturer and his audience; in short, when we in Norwich shall have a scientific centre worthy of the Museum and of the great reputation which this district has always held.

What a happy change, too, when the old Castle of Norwich—the last of our three city prisons—shall exchange its human prisoners for forms, imprisoned indeed, but not human; and intended only to enlarge and instruct and make more free the mind of man. And when Science and Art and the cultivation of the intelligence shall tend year by year, and ever more and more, to render real

* This grand Castle Museum was opened by their Royal Highnesses the Duke and Duchess of York (now Prince and Princess of Wales) on October 23rd, 1894; and this Society's meetings are now held in it.

prisons less and less required. And when the moral sense and the force of cultivated public opinion shall suffice to reduce crime and ill-doing to its minimum. We gladly recognise how much has already been done, and we look forward with hope in both these directions to the good time coming.

In now resigning this chair to my learned and distinguished successor, I can only trust that he will find his year of office as pleasant, and as profitable to himself, as the Members of this Society, and their excellent Secretary, have rendered mine to me.

VIII.

THE PARISH OF ST. GILES'S, NORWICH, AND ITS CHURCH.*

THE parish of St. Giles's, though relatively not large, yet has always in later periods occupied an important position in the City of Norwich. It formerly—as is usual with parishes dedicated to Saint Giles—lay upon the outskirts of the city, though not *necessarily* within the city proper previously to 1253† (as Mr. Hudson has pointed out), when the city was enclosed with a fosse. In recent times Norwich has expanded largely in the direction of Earlham and Heigham, and St. Giles's is now completely overlapped by these populous suburbs.

Blomefield describes the parish as having been part of a new portion of Norwich called the New Burgh, originally settled in the time of Edward the Confessor, but much increased at the Conquest by the Normans or Frenchmen settling in it. He says they chose and took this position as being the pleasantest part of the city; but it may also have been that they selected it as being merely the best ground as yet unoccupied by earlier settlers.

St. Giles's parish is broadly triangular in form, with its base along Chapel Field Road and St. Giles's Hill. It

* A Paper read at the Church in May, 1891, before the Norwich Archæological Society.

† Kirkpatrick's Streets and Lanes of Norwich.

covers (according to Ordnance Survey) a space of 22·952 acres, and comprises within its area rather more than half of Chapel Field. Its western boundary is along the site of the old city wall, and of St. Giles's Gate, whilst on the eastern or city side it extends as far as Fisher's Lane and a little beyond. The population in 1881 was 1,438.

A main city street runs through it, now known as St. Giles's Street, but formerly called Inferior Newport, Nether Newport, or Lower Newport; Bethel Street being then called Over or Upper Newport.

This street is handsome and well-built, and contains several large and important houses or mansions. Of late years several of these have been converted into the homes of public institutions, and the "Young Men's Christian Association," "Gilman's Insurance Offices," and the "Masonic Association," now occupy some of the largest of them.

On the north side of this main street, near to Fisher's Lane, formerly stood a *Domus Dei*, or Almshouse, but this was pulled down about 150 years ago. Browne, writing in 1814, says: "On the south side of this street is the office of Mack's London Waggon, which go and return to and from London every week." These waggons continued to ply for many years; and "Mack's yard," which adjoined what is now Mortimer's Hotel, was a business centre of considerable importance.

In olden times, *Fisher's Lane*, which extends from St. Giles's Broad Street to Pottergate Street, was believed to have been so called as being the road to a fish-quay, which formerly existed there; but this is now thought to be very doubtful. The other principal thoroughfares are *St. Giles's Plain*, in which was formerly an open pit—seen and mentioned by Kirkpatrick, but long since filled up; *Rigby's Court*, leading from it, formerly called *Pit*

Lane, but now known as Rigby's Court, from the eminent Dr. Rigby, who once lived at its St. Giles's end; and *Willow Lane*, noteworthy for having for a time been the residence of the Rev. Francis Blomefield, the Norfolk historian, and of George Henry Borrow, the celebrated writer.

The principal PUBLIC BUILDINGS are

The Church,

The Church Schools, built in 1862,

The Roman Catholic Chapel, erected in 1828, and

The Volunteer Drill Hall, erected in 1865-6.

Until quite recently the City Prison stood immediately outside the Gate of St. Giles; but the site of this prison is now occupied by the Roman Catholic Church, now in process of erection.

In earlier times a *Leper-house* existed just beyond the gate.

Also until recently there existed just beyond the gate a series of remarkable and ancient *chalk vaults*, or excavations. They are described by Mr. Woodward (*"Archæologia"* vol. xxij., p. 411), who showed a plan of them made by John Bond in 1571. Woodward thinks they were galleries made to obtain the chalk flints for building purposes, whilst Mr. Rye says "they were probably worked by the masons of the Castle and Cathedral for the sake of the chalk." They are now filled up.

The City Wall, built between 1294 and 1319, surrounded the outer and western margin of this parish; and St. Giles's Gateway, the "*Porte de Newport*," or Gate of Newport, stood at the western end of St. Giles's Street. Over this gate, at one time, lived an hermit. It was pulled down in 1792. In 1867 the greater portion of this part of the City Wall was also taken down; only a small portion near the southern end of Chapel Field,

with one of the towers, being left standing. A photograph of this remnant is given in my book on St. Giles's parish; as well as views of the Gateway as it existed in 1720 and 1792. The latter were sketched by the Ninhams, and published by Mr. Fitch in his work on the Gates of Norwich.

Chapel Field, whose history is so strongly interwoven with that of Norwich, lies on the southern side of St. Giles's. It takes its name from a Chapel of St. Mary, which formerly stood where now is the building used as a High School for Girls. More than half of it lies in this parish (4·790 acres out of a total of 8·994 acres). It was formerly known as Chapel Field Croft; and its ancient owners are stated by Blomefield to have been the Prior of Buckenham, the Prioress of Carhowe, and the Dean and College of the Chapel in the Fields. But it appears to have been acquired by the City during the sixteenth century, after the dissolution of the monasteries. Chapel Field was at one time a sort of *Campus Martius* of the city, and was used for the musters and training of the local trained bands, as well as for military reviews. After its acquirement by the Corporation, the Field was for a long time usually let out on lease.

In 1707 it was first railed in. In 1746 its main avenues of trees were planted by Sir Thomas Churchman. In 1792 a large portion of it was used for the construction of the reservoir of the old Norwich Waterworks. In later times it has been used for the drilling of Militia or Volunteers; as well as for Volunteer reviews; also for the holding of fêtes, flower shows, bicycle meetings, and horse shows. The well-remembered Fisheries Exhibition was held in the Drill Hall in 1881.

In 1866 the Prince and Princess of Wales each planted a Wellingtonia tree in the Field, but these did not flourish,

and have been removed. In the same year the Field was enclosed with its present handsome iron palisading, and it has since then been transformed into the delightful Chapel Field Gardens, as we now see them, with their special beauties, and the handsome iron Pavilion in their midst.

The Church of St. Giles, dedicated to the Saint of that name, stands on the north side of Upper St. Giles's Street; and is a striking object as we pass up the street, as well as from many other points of view. It occupies a commanding position, overlooking much of the surrounding district, and was anciently called St. Giles's on the Hill.

Blomefield says it was founded by Elwyn the priest, and given by him to the Monks of Norwich, after he had procured an indulgence of twenty days' pardon for all who should come and offer here on St. Giles's Day, or within seven days after, and it was rebuilt in the time of Richard II. The chancel, which appears to have been a very long one, was demolished in 1581, and was not rebuilt until the general restoration of the Church in 1866, when it was restored mainly at the cost of the Rev. W. N. Ripley (now Canon Ripley) who was then Incumbent.

The Church is a fine perpendicular flint-work structure. The tower is large and well proportioned. It is battlemented and crowned with a small bell-cot and weather-cock. It is rather more than 113 feet high, and the hill upon which it stands is 85·8 feet above the level of the sea. From its height and conspicuous position, it was selected in 1549 for placing a cresset, for a fire beacon, upon its top. There was formerly a Cross and Image of the Trinity in a niche on the west side of the steeple (Blomefield). It has a clock on its eastern face, and contains eight bells, one of which is rung as a Curfew every evening

at eight o'clock, as has been the case for more than four hundred years, in accordance with a benefaction of one John Colton, in 1457.

The Belfry Chamber contains five large steeple-boards, with many names of ringers.

The Porch has a fine groined vault, with fan tracery, and a rich parapet and cornice.

Kirkpatrick (1712) says of it : " There is a neat porch of freestone on the south side of the Church for entrance, with a chamber above it. On each side of the window, which is in the front, is a niche (with) spired top. On each side of the arch of the door, cut in stone, is a cherub with an escocheon before him. That on the east side has two pastoral staffs. On the (west) a Pall, and at the top of the porch a border of carved work whereon you see the letter G of the antient form with a crown upon it and an escocheon with vine branch of various small ones denoting St. Giles, to whom dedicated." (These three niches are now empty.) On the north side of Church there is no porch, but only a door opposite to that of the south. (This doorway no longer exists.)

The Church itself consists of new Chancel, Nave, and North and South Aisles. The whole building is about 120 feet long, and the nave with its aisles is 48 feet across. The roof is of good open woodwork, supported by " Angels bearing shields, emblazoned with the Arms of England, France, and Castile" (Bayne). And Taylor says the Arms of Norwich Priory are (or were) seen in this roof. The columns supporting it are light and elegant. They are four in number, with a pilaster at each end, and they divide the nave from the aisles. The clerestory windows have been modernised. They are five in number, and closely correspond to the larger windows in the walls of the north and south aisles. Of these there are five in

the north side, and four (and the porch) on the south side.

Blomefield says that "In the west end of the south aisle there was formerly a chapel, altar, and image of St. Catharine, with a light burning before it; and against one of the pillars there was a famous rood called the Brown-rood. There was a Gild of St. Mary kept before the altar of the Virgin of Pity. The west window in the north aisle was adorned with the history of Our Lord's passion; and there were lights burning before the images of St. Mary, St. John Baptist, St. Christopher, St. Unkumber, and St. Wilegesartis; besides those that continually burned before the Holy-rood, or cross, the Holy Sepulchre, and the Sacrament."

Mr. Hudson says that S. Uncumber and S. Wilegesartis, or Wylgefort, were the same person, and in the *St. Peter Mountergate Parish Magazine* for February of this year (1891) he has thus briefly given her history: "She was a beautiful maiden who was ordered to marry a man to whom she had a great aversion. While she was at her wits' end to know how to avoid her fate, she was delighted to discover that in the course of a few hours she had become adorned with a full-grown and very ugly black beard. This, of course, disposed of the gentleman. Wylgefort lived to be a happy old maid, and when she died was honoured as a Saint. . . . She was thought to have some special power to uncumber (*i.e.* disencumber, make free) discontented wives from disagreeable husbands. Hence her popular name."

The remains of a colossal fresco painting of St. Christopher and two consecration crosses were discovered on the wall of the north aisle in 1723.

At the lower end of the Church stands an ancient stone *Font*; the upper part, or basin, evidently of much older

date than the base, which consists of a pedestal and two steps. The outer part of the basin has eight facets, carved with shields and flowers, and below these are eight cherubs' heads, with flowers between. The pedestal is carved out on its sides into niches, having cusped tracery heads. There was formerly a cover, which has been lost. Standing within the large basin is a small leaden vessel and cover, a rough miniature copy of the font itself, made about fifty years ago by Mr. Culyer, then parish clerk.

The Communion Plate * consists of six pieces, silver gilt, and presented by Robert Snell in 1738, and of two brass bowls, presented by Mr. John Gurney in 1869.

The reading desk and pulpit, the organ, the oak fittings, and the vestry room were all added in 1866, when the whole Church was restored, and the Chancel rebuilt.† The building is thoroughly heated by hot water. The Communion rail was added about five years ago.

The Church contains several monuments, besides mural tablets and inscribed stones. The principal of the former are those of

Adrian Payne, 1686, the founder of Payne's Charity.

Robert Snell, 1738, who gave the Communion Plate.

Alderman Churchman, 1742.

Dr. Offley, 1767.

Sir Thomas Churchman, 1781.

Dr. John Bevor, 1815.

The Stannard Family, 1838.

Slabs to the memory of Henry Crossgrove, printer, 1744, who published the first Norwich newspaper in 1706; and

* Described by Mr. Manning in Vol. x. of Archæological Society's "Transactions."

† The large East Window of the Chancel has recently been filled with a handsome design of stained glass, by Clayton and Bell, of London, and presented by the Author.

to Elizabeth, wife of Colonel Cobbe, of Sandringham Hall, 1698, may also be mentioned.

There are several brasses, the two principal represent Robert Baxter, Mayor of Norwich in 1424 and 1429, with his wife ; and Richard Purdaunce, Mayor 1422 and 1433, with his wife. Both of these are figured in Cotman's "Brasses of Norfolk."

Other and smaller brasses are inscribed with the names of John Smith, Elizabeth Bedingfield, Margaret Landysdale, Thomas Hervey, and Rachel Spendlove.

The Room over the Porch contains some church standards of former St. Giles's Mayors ; also a dilapidated 'Parish Umbrella' ; and the parish 'Watchman's Crake,' or rattle.

The Parish Registers date from 1538, and are very perfect. The Burial Register shows distinct evidence of the presence of unusual mortality in some of the well-known pestilence years. The first part contains a very remarkable illustrated dedication.

The Churchyard was altered and enclosed with a wall and iron railing in 1866-7. Taylor says that a Hermitage formerly existed in its south-west corner.

There are several and important parish *Charities* ; their proceeds being partly for Church purposes, and partly for the benefit of poor parishioners.

The incumbency has an endowment of about £70 a year. It was formerly a Perpetual Curacy, and is now a Vicarage. It is in the gift of the Dean and Chapter. A vicarage house for the minister has been purchased quite recently.



THE TOWER OF ST. GILES'S CHURCH.

IX.

THE TOWER OF ST. GILES'S CHURCH,

*And some things in relation thereto.**

By "relation thereto" I mean that my paper will first speak of myself—my personality and my belongings—and then recall to your memory a few of those changes and events of interest which have taken place in my neighbourhood and surroundings.

PERHAPS I ought to apologize for bringing before such a learned branch of the Church of England Young Men's Society, as is this its Literary Class, so many familiar facts and events as are here alluded to. But nevertheless, I have thought that there might be some considerable interest in grouping and recalling to our minds a few such items connected with one city centre, and especially as they might be supposed to be noted by such an eye-witness as I have suggested myself to be. A knowledge of our city, of its specialities, its changes, and developments, is always good mental store. And although it might be said—are not many of these things to be found recorded in the City Archives, and in the volumes of City History? yet almost certainly many of the members of this class will not have studied these. And therefore, it may fairly be hoped that this little paper may stimulate the historical

* Read before the "Literary and Debating Class" of the Church of England Young Men's Society, on March 7th, 1906.

bump of some of the brains here present, and arouse in them a desire to further study such archæological facts and local histories.

And here let me quote some lines of the Suffolk poet, Bernard Barton, in reference to the survey or study of past events or history. He says :—

“ No useless, or ignoble toil,
To him who in ‘ the past ’ delights,
Seems it—from dark Oblivion’s spoil
To cull whate’er our taste invites,
Of by-gone legends, parted rites,
In earlier days believ’d as true ;
And bid our old ‘ Historic Sites ’
Peopled afresh, to charm anew.

“ That is no true Philosophy
Which does not love at times to trace,
With glowing heart and moisten’d eye,
Time honoured haunts, whose chiefest grace
Is to have been *their* dwelling-place
Whose names in history’s page are shrined,
Whose memories time can ne’er erase
From many a fond admiring mind.”

Well—my *name* and *title* is

THE TOWER OF ST. GILES'S CHURCH,

*and as such I shall speak of some of the many things which I have
seen.*

As you may suppose, from the prominent position which I—the Tower—have for so many centuries occupied in this old city of ours, I have long since ceased to suffer from the undue modesty which so often accompanies equally deserving but less conspicuous merit. I can only hope that you will agree with my reasons for anticipating

from you some of that appreciation and interest which I certainly take in myself. And I propose to introduce my subject in the novel way of speaking of myself as personal, and as having noted, during my long life, various matters to which I shall call your attention.

As an introduction, I am proud to think that I need only say, once again, that I am the Tower of St. Giles's Church, Norwich. And surely there cannot be many of our citizens who are in the habit of passing up our broad street, St. Giles's (the lower Newport as it used to be called), who have not been struck with the fine proportions of my structure, standing as I do at the head of this fine thoroughfare, and looking and being an object of admiration for my beauty and my striking position. Many are the beautiful views which I present to the passer-by in the varying lights of the day, but my beauty and grandeur are, I think, seen best of all, when in the evening the sun is setting behind me in the west, or the moon with her paler light throws down along the length of the main street of St. Giles, those shadows, which—produced by my intervening tower—are so well worthy of the admiration of all who have eyes to see, and minds to appreciate, the glory of evening views.*

Let me say here in passing that Saint Giles, the saint after whom I am named, appears to have lived in France; and history relates that he was adopted as the typical

* Mr. T. West Carnie, in a little volume entitled, "In Quaint East Anglia," speaking of Norwich by night, says, "If Norwich is beautiful by day, with the August sun kissing its red roofs, it is as lovely by night under the beams of the harvest moon." "Under the moonbeams Norwich makes a pretty picture from whichever point it is viewed; and the effects in some of the narrow streets are very wonderful. I mind me of one special 'set,' if I may so call it, namely that in which, from St. Giles's lower end, the street entirely in shadow, you look out westward upon the lofty church tower sheeted in moonlight against a clear sky,"

Patron of the crippled portion of humanity from his being himself lame, and from his having been said to have effected a miraculous cure of a sick beggar. As such Patron, parishes which, like mine, were located on the outskirts of towns, have frequently been given the name of St. Giles, as having had the duty, in the olden time from their position, of contributing to the needs of passing wayfarers, and of those requiring Christian charity. And thus, in Norwich, not only was my own parish named after this saint, but the so-called "Old Man's Hospital," in Bishopgate Street, at the other end of the city, was also formerly called St. Giles's Hospital.

Well, I am the Tower of St. Giles's Church, and I have stood in my present position for at least five hundred years, having been built (or rather rebuilt) in the time of King Richard the Second (who ceased to reign in 1399). I am twenty-six feet square, and I am also one of the tallest church towers in Norwich. And not only so, but I stand in one of the most conspicuous positions in the city, on the top of St. Giles's Hill. I am a square Tower, built like the adjoining Church, largely of flint stone, nearly 120 feet high, battlemented at the top, and having also a small cupola or bell-cup in the centre of my roof, with a conspicuous weather-cock above this. In earlier times, in consequence of my height and conspicuous position, I was used as a Beacon-tower, *i.e.* a pail containing fuel was hung at one of my corners, ready to be lighted as a danger signal in case of invasion or other serious emergency. Such a beacon, as you may know, was often called a "Cresset," from the French "*Croisette*," which was a pail with a cross on its top.

I am proud of my public spirit and loyalty, for on royal and other special occasions, I raise on my summit a tall flag-staff, and float from it a large and handsome flag. In

this, I am sorry to say, I have too few imitators or companions amongst our church towers, perhaps for the reason that even such loyalty as this is expensive, and costs, I am told, some few shillings for each such display. Amongst my various public uses, you have probably all seen soldiers from the barracks on my roof practising flag-drill in connection with others in Chapel Field.

I have said that I am largely built of flint stone, which is of a very enduring nature. In consequence I am thankful to say that I have a very excellent constitution, and have stood the wear and tear of a long life without requiring much fortifying or repairing. I can only venture to hazard the bold suggestion that my excellent health may also, in some mysterious way, have been due to the near presence of so many Norwich doctors, residing as they have so largely done in the neighbouring Bethel and St. Giles's Streets!! At any rate, for a long time past I had scarcely wanted professional assistance, until about two years ago, when two of my windows (or eyes, as I call them) needed technical help and repair.

Speaking of flint for building, we all know that some of the finest flint work in the kingdom is to be seen in this city, notably in St. Miles's Church, and in a wall in Bridewell Alley. My flint work is inferior to these, but still handsomely faced. No doubt the large use of flint stone in building our Norwich churches was due to the abundant supply of this material which has existed in the neighbourhood. And with regard to myself it may well have been that my flints, or some of them, may have been extracted from the ancient chalk excavations which until lately existed just beyond St. Giles's Gates. Mr. Walter Rye, as you perhaps know, has also suggested that flints from these caves may have been used in the building of both the Cathedral and the Norwich Castle.

As curiously illustrating local specialities, one of my parishioners has told me that when travelling some few years ago in Cornwall, where granite and other hard rocks prevail, but no gravel or flints, he asked one of the residents whom he met, if she knew of flint stones, to which she replied, "Oh! yes, I know flints, I have seen one in the Museum at Torquay." I much fear that not even one flint is to be seen in our grand Museum on the Castle Hill!

Whilst on the subject of myself (the Tower), I may mention THE CLOCK, which has so long existed on my eastern face, and which, judging from the constant reference made to it by the passing throngs, is an undoubted public boon. To the parish it is a source of some expense.

This Clock was restored and re-coloured at the general restoration of the Church in 1865-6, when the figure of *Old Time*, holding a scythe in his hand (as many of us will remember), was removed. The Clock face and Clock hands do not look to the passer-by to be very large; but I find, on measurement, that the diameter of the Clock face is 10 ft., that the Roman letter numbers on it measure $1\frac{1}{2}$ ft., that the length of the large hand is 6 ft. $5\frac{1}{2}$ in., with a weight of 21 lbs., and that of the small hand 3 ft. 4 in., with a weight of 8 lbs. My Clock has belonging to it a special Clock Bell.

Then, as to my contents. As this is an Autobiography, and as all Autobiographers are necessarily egotistical, you must allow me to dwell a few minutes more upon my personal specialities. And first, as to my *Peal of Bells*, eight in number, which are naturally of great interest to myself, and which hold a high place among the various peals of Norwich. These, according to the high authority of the late Mr. L'Estrange, were placed in me between the years

1593, or earlier, and 1738, and they were renovated and restored in 1870, at the expense of Messrs. Browne, Bridgman, and Firth, parishioners of St Giles. (One of these bells is what is called a *Gabriel Bell*—the “Angel Gabriel brought the good tidings to the Virgin Mary.”) And think for a moment what phases of life these bells have taken part in during all these hundreds of years. I find that since 1538, when our parish registers begin, some 2,524 entries of *marriage* have been made in them. And it is reasonable to suppose that at a fair proportion of these, especially in earlier times, my bells have rung out their merry chimes, and in their special language have wished all joy and happiness to the newly wedded pairs. You remember how Byron speaks of this: “And all went merry as a marriage bell.”

On the other hand, during the same period, or, rather, up to 1856, when interments in the Churchyard ceased by Act of Parliament, *i.e.* in 318 years, nearly ten thousand (9,770, as roughly counted) entries of *burials* here are made in the parish register books. And it is almost certain that one of my bells has announced first the fact of the death, and then that of the mournful ceremony of interment, in each of these cases. Just think, as I do, of all these ten thousand dead lying at my foot, waiting, as Baring Gould has so beautifully said, for the “Resurrection morning,” when “soul and body meet again.” Such an accumulation of mortal remains in so limited a space may well arouse much and solemn reflection. How well a Suffolk poet reverently describes such a disused graveyard as mine now is, where he says:—

“The gathered ashes of long centuries rest ;
A few *white* tombstones and a few *dim-gray*,
Mark names that have not yet quite passed away.”

Nor can I fail to quote to you Gray's beautiful words, so applicable to such a disused churchyard :—

“ Hark ! how the sacred calm, that breathes around,
Bids every fierce tumultuous passion cease,
In still small accents whispering from the ground,
A grateful earnest of eternal peace.”

The graveyard of St. Giles, which lies beneath and around me, is, as I have already said, no longer used for burials. It is quite full and crowded with graves and many memorial tombstones. The names upon these, as far as legible, are fully and completely given in the book which has been published by a parishioner of mine,* upon the “ Parish of St. Giles.”

It is historically interesting to know that the burial registers, by the increased number of interments in some of the long past years, point unmistakably to the prevalence in Norwich at those times of the dread Pestilence or Plague, which is recorded as having ravaged the city from time to time. Thus, in 1603, no less than 112 persons were buried here ; and in 1666, some 79—both of these “ Plague years ”—instead of a normal average of twenty or thirty. As you may suppose, I (the Tower) shared acutely in the distress which then reigned in the city, intensified as it was to me by the fact of three or four burials occasionally taking place here in the same day. In some other years, an increase of burials may probably have arisen from this place of mortal rest having been a favourite one, and, therefore, selected for the interment of some who had not been resident in the parish. This was certainly so in the fifty years preceding the closure of the churchyard, when fifty, sixty, or seventy were often annually interred here.

* The writer of this paper.

But to return to my bells. The perpetuation of the old custom of ringing each night what is called the *Curfew Bell* in my Tower is well known to us all. This Curfew ringing is now an anachronism, but it doubtless was a great boon at the time of its foundation, seeing that so many legacies were left in various places, as here, for the purpose of having a "Curfew" rung each night in perpetuity.

My Curfew Bell, instituted and endowed in 1457, by Mr. John Colston, and who was buried in St. Giles's Church, has now rung continuously for some 450 years. And although some people may think this evening tolling of a bell for a quarter of an hour a nuisance, it has in this particular case this merit, that it acts, or has done, as a sort of daily almanac, seeing that the day of the month is told at the end of the quarter of an hour's ringing, each evening, by a number of strokes on a different bell, corresponding to the day of the month.

The name "Curfew," you doubtless know to be derived from the French *Couvre-feu*, or cover fire. And also that the custom in olden times of a public ringing of a bell, or sounding a horn, for the putting out of fires and retiring into houses for the night, arose from the out-door dangers of those less civilised times, and from the inflammable nature of many of the wooden and thatched houses then existing. One such fire in Norwich (in 1507) is said to have destroyed seven hundred houses, including many in my own parish. Who does not know Gray's lines on this Curfew custom?

"The Curfew tolls the knell of parting day,
The lowing herd winds slowly o'er the lea ;
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me."

And we doubtless also remember Longfellow's beautiful verses on this old custom :—

“ Solemnly, mournfully,
Dealing its dole,
The Curfew Bell
Is beginning to toll.

“ Cover the embers,
And put out the light ;
Toil comes with the morning,
And rest with the night.

“ Dark grow the windows,
And quenched is the fire ;
Sound fades into silence ;
All footsteps retire.

“ No voice in the chambers,
No sound in the hall ;
Sleep and oblivion
Reign over all ! ”

With all this, and what I have now said, I think I may claim that I—the Tower—have fully discharged the general duty of public usefulness, and am a great public benefactor. My beacon pail is no longer required ; but by my weather-cock I tell the direction of the wind ; by my clock I tell the time of day ; and by the final strokes of my curfew bell at night, I act as an almanac, and tell the day of the month—for the benefit not only of my neighbours, but to the great multitude of the passers-by.* And let it not be forgotten that all this implies not only the discharge of public duty, but also

*Further, it may be noted, that my clock is a striking clock, and as such is of considerable value to the large body of workers who live within sound of the bell, and who have to begin or return to their employments at fixed times.

the expenditure of money, necessary to keep the various arrangements for these in correct and working order—money which has to be provided by the parish of St. Giles.

Opinions as to the desirability of the ringing of the *Church Bells* in towns differ, as we know, considerably. And every now and then we read a letter in a newspaper in condemnation of them. But I believe that those who think thus are in a very small minority. I have said how well they emphasize such occasions as weddings, and funerals. And I think they most appropriately add to the expression of public rejoicing on such occasions as the election of a new Mayor, or a royal visit, or a royal anniversary—or especially on the eve of such a great Christian festival as Christmas or Easter. But beyond all this, I (the Tower) consider that they are in the best sense public music, and that when well rung this music is of a very high order indeed. Who does not recognise the grandeur of the great twelve-bell peal of St. Peter Mancroft, as rung by the skilled ringers of that church, or the solemnity imparted to a public mourning by the muffled peal occasionally rung, on the departure from this world of some great local or national citizen?

In country villages I know that the possession of a good peal of church bells is usually very highly appreciated, and the practice of the ringing cannot be otherwise than an excellent musical training for the young men of the parish.

It is curious how little regard *Jackdaws* pay to the noise of clanging bells. In my tower, as elsewhere, they habitually build their nests, and rear their young, apparently quite free from alarm at the noise. From their constant selection of church towers as breeding

places, may we not suppose that these birds have ears for music, or may even practice singing amongst their family parties, to the accompanying chimes?

I have windows on all four of my sides, and until lately (1866), when the Church was so thoroughly restored, I had an eye in my lower eastern portion which enabled me to view the changes which have taken place in the interior of the Church. Long, long ago, I noted the dilapidation of the Chancel, and its final demolition and removal (in 1581), on a bargain being made by which the parish was allowed to take all the remaining lead, stone, and other materials (for some parochial charity) belonging to it, on condition that the Dean and Chapter were no longer to be held liable for its repair. This *Chancel* I had the pleasure of seeing rebuilt in 1866, mainly through the beneficence of Rev. Canon Ripley, then incumbent of the vicarage, when also the Church was finely restored, and reseated.

You are aware that the years 1903-4 represent the five-hundredth anniversary of the giving of a Mayor to the City of Norwich. Several St. Giles's inhabitants have held this important office, as well as that of Sheriff, during all those centuries, but I will only specially mention the names of *Richard Purdaunce* and of *Robert Baxter*, who were very early Mayors, in 1420 and 1424 respectively, and who were interred in the nave of this Church, with brasses over their tombs. These still remain, and are of considerable interest as showing the costumes of the period.

And now as to the parish of St. Giles itself, in which I stand, I cannot but recall with satisfaction the large number of residents who have been in their day most important and influential citizens in various departments of life. As public men I will only mention the

names of a few such departed neighbours whose careers and public services I have watched. Let us only recall the names (given alphabetically) in public life of such examples as Baxter, Beever, Bolingbroke, Cadge, Chapman, Churchman, Cole, Crosse, Day, Foster, Herring, Kinghorn, Johnson, Lubbock, Offley, Purdaunce, Ranking, Rigby, Suffield, Taylor, Wilkins; or as ornaments of the literary and artistic world, such names as Brand, Blomefield, Borrow, Crossgrove, Charlotte Elizabeth, Daniel, Ninham—and now we may add that of Bateman. This, you will agree with me, is a goodly list, and marks out St. Giles's parish as having been one of the most important residential districts in the city, and as having largely contributed to its welfare and general reputation. And in this regard we may well regret that so many of the fine parish residences have been or are being absorbed by public companies or other bodies; and that in consequence, the most actively important men of the city are gradually being driven to other and more distant localities. And we may even note here how the neighbouring and almost historical old "Norfolk Hotel" has been swept away, and its site occupied by a modern variety theatre.

Further, as a sign of the times, I may mention to you a spot in St. Giles's Street, situated behind "Mortimer's Hotel," which was long known as "*Mack's Yard*." Mr. Mack was for a long period the enterprising proprietor of some carrier waggons, which made a weekly journey to and from London, carrying parcels and goods. This was in the days when the stage coaches to London occupied two days in the journey; and when the starting of these coaches, as well as of Mack's waggons, was an interesting incident of Norwich life.

So much for my immediate personal relations. Let me now look a little further around and beyond me.

No doubt, almost everyone present this evening, when crossing Mousehold Park, or when passing along the roads on the outskirts of the city, will have noted how I—the Tower—stand out more prominently than any other object than the Castle or the Cathedral spire. And, on the other hand, those of our younger citizens who may have ascended to my summit, can bear testimony to the wide and expanded views from it of the surrounding country. In fact, I command a view, not only of much of the city, but also of the neighbourhood for many miles around. And this commanding position has enabled me to note most of those great changes, and improvements, which have taken place—by slow degrees and with many fluctuations—in the city generally. And, of course, I have keenly felt the change in my own position which the recent spread of the city all around me has produced. Not so very long ago I was situated in its very outskirts, and very close to the boundary City Walls. Now, I am almost in the heart of Norwich, and from my summit I can see the lines of houses extending a mile or more beyond me, and, I fear, detracting by their extent from the conspicuous dignity of the position which I had so long enjoyed.

Of the many more distant but important Norwich events of the past centuries, which from my lofty position I have been enabled to witness, I will only mention two or three which have specially impressed me, thus :—

In King Edward VI.'s reign, I was able to note many of the incidents connected with Kett's Rebellion.

A little later, I saw the reflection of the fires at the Lollard's pit, when Bilney and others were there burnt for their religious opinions.

I saw the processions attending the visits to Norwich of Queen Elizabeth, and of King Charles II. And you will remember that it was on this latter occasion that our distinguished citizen, Sir Thomas Browne, to whom we have so recently erected a statue, received the honour of Knighthood from his Sovereign.

Then again, I was cognizant of the blowing down of the Cathedral spire, during a great storm, in 1601; and of the spire of the St. Andrew's Hall tower.

And, shall I say, with how much regret in quite later times, I witnessed the riotous and disgraceful scenes which took place at some of the Parliamentary elections held in Norwich—followed, as we know, by the exciting but not too pleasant "Chairing" of the elected candidates.

In my more immediate neighbourhood I have watched the foundation (in 1714) and the subsequent career of that beautiful example of Christian charity, the well-known Bethel Hospital for the poorer class of insane patients. We all know that in those earlier times, simply to remove from the general community and to house those suffering from mental derangement, was all that was known to be able to be done for those thus afflicted. But I have been charmed to note from my window-eyes how greatly their treatment has been improved in latter times, and to watch with pathetic interest the great changes which have been made, and are still continually being made, for the comfort and recreation and general welfare of the patients in this beneficent institution.*

Very numerous and historically important are the changes and advances and improvements which have

*A very handsome and illustrated volume on the history of this Bethel Hospital, by the late Sir Frederic Bateman and Mr. Walter Rye, has recently (in 1906) been published.

taken place in our city during the last 150 years, and which I have witnessed from my lofty summit.

In 1770, I saw the first *Norfolk and Norwich Hospital* built, and I have seen the old building replaced (in 1879-1881) by a larger and handsomer structure.

In 1792, I saw our *St. Giles's Gate*, along with many others, taken down and removed ; whilst, in 1867, I saw much of the neighbouring *City Wall* demolished, only a small piece of it being left in the Chapel Field Road, and in the adjacent "Duck Lane."

You will remember that this defensive wall was built around the city between the years 1294 and 1319, and was broken down between the St. Stephen's and St. Giles's Gates by Earl Warwick's army, in the time of Kett's Rebellion.

Then I have seen numerous churches and chapels, factories, and other large buildings, arise in various parts of the city—these latter including the Norwich Union Workhouse, the Jenny Lind Infirmary, and (in the far distance) the Hellesdon Asylum.

I have also witnessed the laying-out of the new Norwich Cemetery, and its more recent enlargement. And at my very foot I have noted the erection of our Volunteer Drill Hall, and the removal of the old City Gaol. The closure of this latter, and of the Castle as a prison, and their replacement by a single model prison on Mousehold Hill, marking the advances of the times and the progressive development of political humanity.

Of the grand Castle Museum, which is in my full view, I need say nothing. Its influence in spreading knowledge, and in developing the higher and better faculties of the mind, are obvious to all. I am pleased to learn of the interest taken in it by the public, as shown by the visiting of it by the more than 100,000 persons who annually resort to it.

If I do not weary you, I would now like to claim your attention for a very few minutes to what may fairly be termed my "Home Circle," that is, to the events which I have witnessed immediately around me in *recent* times. Several of these have been closely connected with the neighbouring "*Chapel Field*," formerly a real and open field, but now a charming recreation garden, and one of the beauty spots of our city, with the present handsome palisading around it, erected in 1866. The avenues of trees which adorn this field are, or were, one of its great features.

And it is worth noting that Norwich history relates that the main west avenue was planted in 1746 by Sir Thomas Churchman, then a resident in St. Giles's parish and an important citizen. The ordinary age of elm trees is (I believe) not greatly more than a century and a-half, and consequently some of these trees have decayed in their branches or trunks. But until a few months ago a long row of the elms towered up to their eighty or ninety feet of height, in great beauty and apparent vigour. I need not say with what pain I looked down upon the process of lopping and topping which was carried out upon these, or how I grieved over such a dire necessity for this operation as was alleged to exist.

One other example of tree grandeur existed until the other day in the northern avenue, namely, a splendid specimen of the *Aspen Poplar*, towering nearly one hundred feet high, and an object of extreme beauty to all who could appreciate such arboreal grandeur. Even so long ago as 1841 this tree was figured by *Grigor* in his work on "The Remarkable Trees of Norfolk," as a fine example of this poplar. And we may well feel how the further sixty-three years of its life had added to its size, its dignity, and its grandeur. I greatly regret that

since the late great gale it has been thought necessary to remove several of its upper branches, and so destroy all its grandeur. But the old line, "Woodman, spare that tree" for the greatest possible length of time was, I hope, fully in the minds of those who presided over its fate.

The splendid *Horse-Chestnut* tree near the centre of the field is familiar to us all, and I have watched its growth and circular uniformity with pleasure and interest.

This Chapel Field, as you may know, takes its name from a Chapel of St. Mary, which formerly existed on the site of the present Theatre and High School buildings. At that time the ground was really an open field; and it seems to have been acquired by the Corporation in the sixteenth century.

Probably few, and perhaps none, of those present in this room, can remember as I do the big water reservoir of the proprietors of the Norwich Water Works of that date, which formerly existed in Chapel Field, near its centre, on ground leased by them from the Corporation. This reservoir was large, nearly three hundred yards in circumference, and had on its north side a tower, into which water was forced to gain height for supplying the higher portions of the city. It remained here from 1792 until 1852, just sixty years, when the lease of the ground was surrendered, the works demolished, and the new and enlarged reservoirs of the present Norwich Water Works Company, at Lakenham, were substituted.

I may mention here a rumour which reached me, and which I have no doubt was true, that in April, 1852, the Corporation of Norwich proposed to place the statue of Lord Nelson, which had just then been executed for Norwich, "on an elegant fountain pedestal

in the centre of this reservoir," which was then about to be disused.*

I have, of course, noted many public events which have taken place in the Chapel Field—martial, agricultural, and otherwise. But naturally, a great impression has been made upon me by observing the historical visits of their Royal Highnesses the Prince and Princess of Wales (now our gracious King and Queen) in 1866 and 1884, on both which occasions they entered Norwich by St. Giles's Gates. The visit of 1866 was, as you will remember, the first they had paid to Norwich, and they were then entertained by Lord and Lady Stafford, at Costessey Hall. The royal party then included the Queen of Denmark (mother of the Princess), and the Duke of Edinburgh; and the procession entered our street under a *triumphal arch* erected on the site of the old St. Giles's Gate. They then attended a morning concert of the Musical Festival then being held; and afterwards returned to Chapel Field, where the Prince and Princess each planted a "Wellingtonia" tree, and afterwards formally opened the new *Drill Hall*.

In 1884 they again attended our Musical Festival, and entered and left the city by St. Giles's Street.

On both these occasions I noted with great pleasure the large crowds of citizens who lined the route of the processions, and the enthusiastic manner in which they welcomed our royal visitors.

All will remember the recent visit of T.R.H. the Duke and Duchess of York (now the Prince and Princess

* Those who have read Mr. Hooper's and Mr. B. Prior's admirable souvenir of the Nelson Centenary, so recently published, will remember how it is there stated that this statue was at first placed in St. Andrew's Hall; then after a year or two was located in the Market Place, near the Guildhall; and then in 1856 was removed to its present position in the Upper Close,

of Wales), when they came to open our new Castle Museum. But my views of the royal procession were from my position unfortunately considerably limited. I am glad, however, to know that one of my parishioners was then Mayor of Norwich, and as such had the honour to receive and entertain the distinguished party.

I—the Tower—have several eyes, but no proper ears, only vibratory sensations, and consequently can only hear indistinctly the sweet sounds of the various bands and singers that now delight so many thousands of Norwich citizens during the summer season in Chapel Field. But that these musical entertainments are appreciated, I can *see* by the large numbers of persons who attend the concerts and listen to the music provided for them. It is not to be doubted that these frequent musical treats constitute a veritable branch of mental education.

In the city generally, I have during the last half century noted the opening of several parks and public recreation grounds, and I have watched with pleasure the gradually increasing numbers of citizens, old and young, who avail themselves of the opportunities which these afford for obtaining fresher air, exercise, health, and vitality. Amongst these, you may be sure of the special and daily delight I take in watching the games and gymnastics of the children, in the corner of Chapel Field just below me, which has been allotted to them, and which was so kindly fitted up for them by the late Mr. Henry Birkbeck.

I will only further say, of the many vast changes and items of social progress in latter years, that I have seen with wonder and astonishment the advent of steam carriages, and the opening in Norwich of three railway stations, receiving trains, some of which have travelled more than fifty miles an hour. Also that as an illuminant, I was long familiar only with the use of oil, shedding its feeble light,

this being superseded by the gas derived from coal. But, quite recently, I have opened my eyes to their widest to observe the lighting of our windows and streets with electric light, and the working of tram carriages upon rails through our main streets (including my own street of St. Giles) by means of the electric current.

Norwich generally, like other cities and towns, has in the centuries marched along the line of steady and continuous developments. Such a brief mention as I have made of some of these is all that can now be given. To give a larger *local* history of these latter eventful times would occupy us too long, and would not only be tedious to such an audience as this, but would be beyond my present purpose. I shall be more than satisfied if, by the little I have said, I have shown how much of interest there is in the study of even one locality in an ancient city like Norwich, and in recalling some of the half-forgotten facts connected more or less intimately with it; and if, as a secondary result, it should create, or revive, in the members of this literary class a wish to include amongst its contributed papers and subjects for future consideration and discussion, that branch of literature which is included under the name of local Archæology. For we must not forget that past history includes the study, not only of work done and changes executed, but also a consideration of the men, the human minds, through whose agency this work and the resulting changes were carried out. And I trust that we shall all agree with Dr. Johnson that "Whatever makes the past, the distant, or the future, predominate over the present, advances us in the dignity of human beings."

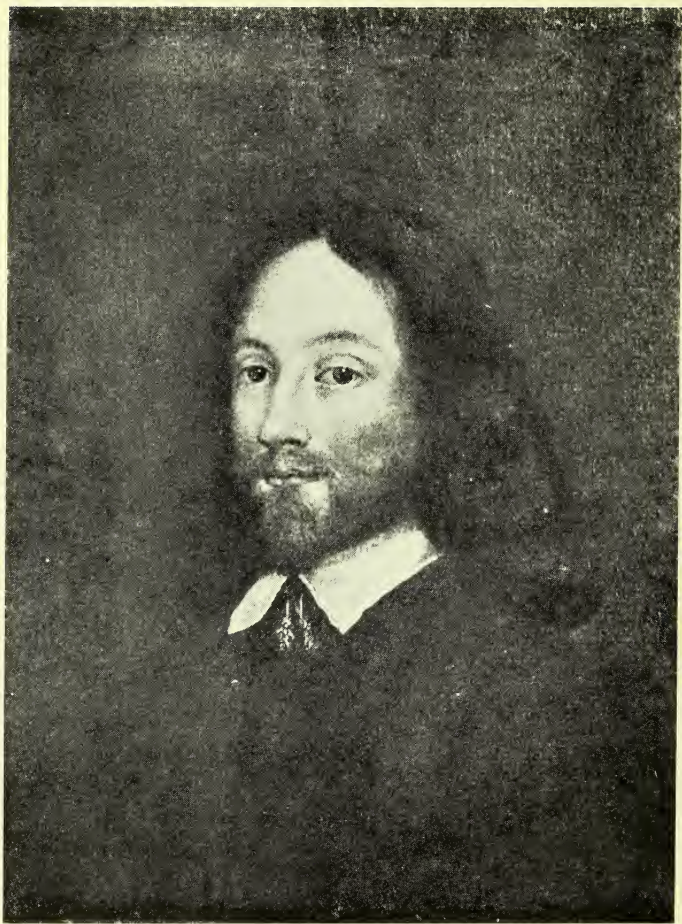
And I would venture here to quote the following from a late learned writer on Norwich (Mr. Mark Knights), who has said: "Wonderful is the amount of thought enveloped

in the buildings and history of Norwich. Would that every citizen had the power to evoke from the monuments of the past the spirit which gave them form, that they might read their story."

Let me conclude by quoting the following opinion from the well-known pages of "Gilbert White of Selborne," with reference to such a local and parochial history as I have ventured to place before you this evening. This great authority expresses very strongly the view that "stationary men should pay attention to the districts in which they reside, and should publish their thoughts respecting the objects that surround them." And again, that a writer upon these (as he himself so learnedly was), if he should "have lent a helping hand towards the enlargement of the boundaries of historical and topographical knowledge; or if he should have thrown even some small light upon ancient customs and manners, his purpose would have been fully answered."

Gentlemen, it is for you to judge whether I have succeeded in placing before you any interesting facts "respecting the objects which surround us," and have "contributed to the enlargement of the boundaries of (*your*) historical and topographical knowledge."

I have expressed some opinions, and placed before you many facts. I hope these may provoke some profitable comments or discussion.



SIR THOMAS BROWNE.

X.

SIR THOMAS BROWNE.

A Paper read at a Meeting of the C.E.Y.M.S. Literary Class, on
Monday, March 12th, 1894.*

I AM glad to redeem my promise to read a paper before this Literary Class, during this present session, upon one of our most noted British Authors, and I have thought that I could not do better than to bring before your notice one of those who literally resided at our very doors ; and whose works—if not so generally read as those of many other writers—are not the less deserving of careful study, and will well repay any time spent upon their perusal. In fact, I make bold to say that the more they are studied, the more does the great learning displayed in them impress itself upon us, and the more also does the high moral nature of the Author make itself felt. I could well have wished that this brief notice had been more elaborate and more worthy of the Author, but I may well plead the great public demands which have recently been made upon my time ; and which often have been so numerous and so continuous, as to leave but little time for literary work or thought, or indeed for anything but the ordinary duties of

* Reprinted from the Society's Journal.

each day as it comes round. The Author whom I have selected for notice this evening is *Sir Thomas Browne*, long a resident in this city, for many years a practising physician here; a gentleman who enjoyed the highest reputation even in his own lifetime, as a man of high character and great literary attainments; who enjoyed personal and literary acquaintanceship with many of the greatest men of his day; and whose works attracted the notice of the learned and the great from the first moment of their public appearance.

The house in which Sir Thomas Browne resided is the one immediately opposite to the entrance to this building; and a portion of it is now the Norfolk and Norwich Savings Bank, just across the street. I am unable to say how far Sir Thomas Browne's house extended at the time of his occupation of it; undoubtedly many of the buildings to the north and east of it have been erected since his time; and as we are told of his extensive garden adjoining it, it is probable that this latter extended far up to, or possibly even on to Orford Hill. It is also believed that he had another garden somewhere upon Mousehold.

Sir Thomas Browne was not a native of Norwich, for he appears to have been born in London in 1605. He settled in practice here in 1634 or 1636, and continued to reside here until 1682, when he died at the age of 77 years. He was buried in the chancel of St. Peter Mancroft church in this city, and a tablet to his memory hangs on the adjoining wall, with a notable inscription, which any of you can go and see for yourselves, but which is too long for me to reproduce here.

I am able to show you an engraving from a portrait of him which long hung neglected in the Vestry Room of St. Peter's, but which now occupies a more worthy position on the walls of the Board Room of the Norfolk and Norwich

Hospital.* I can also show you a copy of the 7th edition of his works, dated 1686.

Sir Thomas Browne was knighted in 1671, on the occasion of a visit of King Charles II. to this city. The King at first offered to confer this honour upon the Mayor of Norwich, but his worship declining the compliment, Dr. Thomas Browne was knighted in his stead.

I have said that Sir Thomas Browne was buried in the Chancel of St. Peter Mancroft Church. Here he appears to have rested in peace for nearly two hundred years, when in 1840—as recorded by Mr. Fitch—(Proceedings of the Archæological Institute, 1847) “Some workmen who were employed in digging a vault in the Chancel of the Church of St. Peter’s Mancroft, Norwich, accidentally broke, with a blow of the pick axe, the lid of a coffin, which proved to be that of one whose residence within its walls conferred honour on Norwich in olden times.” “The bones of the skeleton were found to be in good preservation, particularly those of the skull; the hair profuse and perfect, of a fine auburn colour, similar to that in the portrait presented to the parish by Dr. Howman” (who in later times occupied his house, now the Savings Bank).

The coffin plate bore a Latin inscription, which was translated by the late Mr. Firth, of this city, thus—“The very distinguished man, Sir Thomas Browne, Knight, Doctor of Medicine, aged 77 years, who died on the 19th of October, in the year of our Lord, 1682, sleeping in this coffin of lead, by the dust of his alchemic body transmuted it into a coffer of gold.”

You are all, doubtless, familiar with the fact that the skull of this great man was then taken away, and finally presented to the Museum of the Norfolk and Norwich

* This Portrait was reclaimed by and returned to the Churchwardens of St. Peter’s in 1900.

Hospital, where, along with a lock of his hair, it still remains, carefully preserved and held in high honour. And you have doubtless heard and read of the efforts which have recently been made to re-obtain possession of it and again consign it to its mother earth. The numerous letters and papers which have appeared in the public press, discussing this question, are also fresh in all your minds, and give nearly every aspect of the matter. One good thing at least they have affected, and that is, to bring Sir Thomas Browne's name into greater prominence than for many long years. And I have no doubt that this incident, together with a reviving interest in the works of this great Norwich writer and thinker, have resulted in his being more famous to-day in Norwich than at any former period since that of his actual residence here and of the years immediately following his decease.

Much has been made, during this discussion, of a paragraph in Sir Thomas Browne's disquisition on urn-burial. He is said to have, almost prophetically, described this incident of the removal of his own skull from his tomb, when he wrote "to be *knaved* out of our graves, to have our skulls made drinking bowls, and our bones turned into pipes, to delight and sport our enemies, are tragical abominations escaped in burning burials." But, I think the whole force of this extract is removed by turning to Wilkin's edition, where this passage runs, "to be *gnawed* (not knaved) out of our graves," which clearly gives it a very different meaning.

Sir Thomas Browne married a few years after settling in Norwich (in 1641), a daughter of Edward Mileham, Esq., of Burlingham St. Peter, in this county, and granddaughter of John Hobart, Esq., by whom he had ten children. Of these ten, his eldest son, Dr. Edward Browne, became very eminent in his profession. He practised in

London, where he was made Physician to King Charles II., and he was afterwards appointed Physician to St. Bartholomew's Hospital, and later became President of the Royal College of Physicians.

Sir Thomas Browne appears to have enjoyed for many years a very considerable practice in this city. But he was also an archæologist, a naturalist, a studier of plants and animals. He had as personal friends or literary correspondents such men as Sir Robert Paston, Sir Hamon L'Estrange, Sir Kenelm Digby, John Evelyn, Sir William Dugdale, and Bishop Hall, and he appears to have found time to carry on a very large literary correspondence. He lived in Norwich from 1634 to 1682, which included the dangerous times of the Stuarts, of the Long Parliament, and of the Commonwealth. But he appears to have been a staunch Royalist. He was knighted, as I have said, by King Charles II., on the occasion of his visiting Norwich in 1671.

Later in this year he was visited by the well-known Evelyn, whose oft quoted passage respecting him runs thus—"My Lord Henry Howard . . . would needs have me go with him to Norwich, promising to convey me back after a day or two ; this, as I could not refuse, I was not hard to be persuaded to, having a desire to see that famous scholar and phisitian, Dr. T. Browne, author of the 'Religio Medici,' and 'Vulgar Errors,' &c., now lately knighted." And he adds, "Next morning I went to see Sir Tho. Browne (with whom I had some time corresponded by letter, tho' I had never seen him before). His whole house and garden being a paradise and cabinet of rarities, and that of the best collections, especially medails, books, plants, and natural things. Amongst other curiosities, Sir Thomas had a collection of the eggs of all the foule and birds he could procure. . . . He led me to see all

the remarkable places of this ancient citty being one of the largest, and certainly, after London, one of the noblest of England, for its venerable Cathedrall, number of stately churches, cleannesse of the streetes, and buildings of flints, so exquisitely headed and squared, as I was much astonished at. . . . The Castle is an antique extent of ground, which now they call Marsfield, and would have been a fitting area to have placed the ducal palace on. The suburbs are large, the prospects sweete, with other amenities, not omitting the flower gardens, in which all the inhabitants excel. The fabric of stuffs brings a vast trade to this populous towne."

Sir Thomas Browne was, as is evident from even a cursory study of his works, a great student. He understood most of the European languages, Latin and Greek critically, and a little Hebrew, and it is quite certain that he must have studied carefully, not only the Christian Scriptures, but also the works of many of the ancient fathers of the Christian Church. His memory of what he had read must have been prodigious. But though he was so learned a man, a traveller, a student of languages, a naturalist, a medical practitioner, and in many respects doubtless ahead of his time, yet a sad blot exists upon his generally great character, and scientific acumen. I allude to the evidence which he gave at Bury St. Edmund's, in 1664, at the trial before Lord Chief Baron Hale, of two women for witchcraft. Sir Thomas appears to have been a firm believer in witches and witchcraft, and the declaration which he made to this effect "was thought to have had no small influence in occasioning the condemnation of the wretched victims, whose execution was one of the latest instances of the kind by which the English annals are disgraced."

After his death his widow resided in his house until her

death. Then it was occupied by Dr. Howman, who presented the portrait of the knight to St. Peter's Mancroft. A large portion of his letters and manuscripts passed into the hands of Sir Hans Sloane, and are now in our National Library at the British Museum.

During this present century the house has been dismantled and converted to its new purposes, and its fittings dispersed. A handsome carved mantel-piece, removed from one of the rooms by the builder, is now in the possession of Mr. Henry Birkbeck, of Stoke; and the very keys of the house were long treasured as relics by the late Mr. Barker, of Thorpe Hamlet.

But I must not dwell longer upon his personality and personal history, interesting though they be, in the light of his being a Norwich man, and the most famous of Norwich authors. If you wish to know more of his biography, you will find it all excellently given in the memoir of him written by Dr. Samuel Johnson, and which, together with a supplemental memoir by Simon Wilkin, is prefaced to the edition of his works in three volumes, published by Bohn in 1852, and edited by Wilkin.

We must next consider to what Sir Thomas Browne owes his great literary fame, and upon what his claims rest for being one of this city's most eminent citizens.

Sir Thomas Browne was a very voluminous writer, and he touched a great variety of subjects. The greatest of his works, the one which was published soon after his settling in Norwich, was undoubtedly that to which he gave the name of "*Religio Medici*"—the religion of a physician; implying thereby, not "that physicians have a religion to themselves, but that physicians have religion as well as other men." It immediately attracted the attention of the most learned in the land, and it is certainly the production upon which his literary fame most largely

depends. It is quaintly written, full of odd phrases, original thoughts, and peculiarities of diction, but equally full of fine sentiments and expressions of confident religious faith. It is a work often so quaint in its diction, so stilted in its modes of expression (as indeed was common in those days), and so interlarded with specialized or new-coined words, that it is somewhat difficult to read and understand. But its high qualities and beauties are so great that it richly repays the trouble of mastering its style ; and I venture to assert that the greatness of its sentiments and thoughts grows upon one by perusal, and that the oftener it is read the more greatly will it be appreciated.

To show what was thought of it from the first, it had, by the year 1736, passed through fourteen editions, and had also been translated into Latin, French, Dutch and German.

Now let me briefly quote a few passages from this "*Religio Medici*," to show the views and opinions upon the Christian religion which are therein set forth.

First, Sir T. Browne says, "I dare without usurpation assume the honourable style of a Christian, not that I merely owe this title to the font, or any education . . . but that having in my riper years and confirmed judgment, seen and examined all, I find myself obliged by the principles of grace, and the law of mine own reason, to embrace no other name but this."

Again, whilst professing himself a member of the reformed faith, he shows the great charity of his mind by saying "I could never divide myself from any man upon the difference of an opinion, or be angry with his judgment for not agreeing with me in that from which perhaps within a few days I should dissent myself."

And speaking of Death, he says "I hold the same conceit (of the soul) that we all do of the body, that it

should rise again," and in all humility he adds " so that I might enjoy my Saviour at the last, I could with patience be nothing almost unto eternity."

As for the many difficulties and mysteries of our religion, he expresses an almost blind faith in all that is written. He writes " I desire to exercise my faith in the difficultest point : for to credit ordinary and visible objects, is not faith, but persuation ;" again, he craves by faith " that greater blessing pronounced to all that believe and saw not," adding " God hath not made a creature that can comprehend him ; 'tis a privilege of his own nature. '*I am, that I am,*' was his own definition unto Moses ; and 'twas a short one to confound mortality, that durst question God, or ask him what he was."

Speaking of natural, as a confirmation of revealed religion, he says " there are two books from whence I collect my divinity. Besides that written one of God, another of his servant nature, that universal and publick manuscript, that lies expanded unto the eyes of all." . . . " Nor do I so forget God as to adore the name of nature, which I define not, with the schools, to be the principle of motion and rest, but that straight and regular line, that settled and constant course the wisdom of God hath ordained the actions of his creatures, according to their several kinds."

And as a comfort to the comparatively weak, he says, in speaking of Christian martyrs, "'Tis not in the power of every honest faith to proceed thus far, or to pass to Heaven through the flames. . . . Yet men may, notwithstanding, in a peaceful way, truly adore their Saviour, and have, no doubt, a faith acceptable in the eyes of God."

These extracts are quite sufficient to show you the tone in which this great work was written ; and to disprove the

allegation made by some against Browne of having written an Atheistical book. It is remarkable that it was placed by the Roman Church in the *Index Expurgatorius*.

Sir Thomas Browne wrote yet another religious or semi-religious book, which was entitled "*Christian Morals*." It is very different in style from the one just mentioned, and the manner is more that of proverbs or aphorisms.

He commences by saying "Tread softly and circumspectly in this . . . narrow path of goodness ; pursue virtue virtuously ; leaven not good actions, nor render virtue disputable." Again, "In this virtuous voyage of thy life . . . let not disappointment cause despondency, nor difficulty despair." "Rest not in an ovation, but a triumph over thy passions. Let anger walk hanging down the head ; let malice go manacled, and envy fettered after thee."

"Be charitable before wealth make thee covetous, and lose not the glory of the mite. If riches increase, let thy mind hold pace with them, and think it not enough to be liberal, but munificent. Though a cup of cold water may not be without its reward, yet stick not thou for wine and oil for the wounds of the distressed."

"Let not the law of thy country be the *non ultra* of thy honesty. . . . Join Gospel righteousness with legal right."

"Let not the sun go down upon thy wrath, but write thy wrongs in ashes. Draw the curtain of night upon injuries, shut them up in the tower of oblivion, and let them be as though they had not been. To forgive our enemies, yet hope that God will punish them, is not to forgive enough."

"Think not that always good which thou thinkest thou can always make good, nor that concealed which

the sun doth not behold. There is no darkness unto conscience; which can see without light, and in the deepest obscurity give a clear draught of things, which the cloud of dissimulation hath concealed from all eyes."

As final quotations from "*Christian Morals*" let me give these sentences, "Bright thoughts, clear deeds, constancy, fidelity, bounty, and generous honesty, are the gems of noble minds,"—and

"Live happy in the Elysium of a virtuously composed mind. . . . Tranquility is better than jollity, and to appease pain than to invent pleasure. . . . Forget not the capital end, and frustrate not the opportunity of once living. . . . Think every day the last, and live always beyond thy account."

I want neither to tire you, nor to read you a sermon at second-hand. So having now shown you the religious side of Browne's character, let me give you some idea of his learning and acquirements and general industry.

In his grand treatise on *Hydriotaphia* or *Urn-burial*, which he wrote consequent upon the discovery of some ancient sepulchral urns at Old Walsingham, in Norfolk, he exemplifies the great stores of knowledge which by his reading and memory he had accumulated. He quaintly prefaces this treatise by saying, "Who knows the fate of his bones, or how often he is to be buried? Who hath the oracle of his ashes, or whither they are to be scattered?" And then he goes on to describe the various modes of disposal of the dead in various ages, and among different nations. For instance, he says that "Carnal interment or burying was of the elder date," as shown by the older examples of Abraham

and the Patriarchs. "But the practice of burning was also of great antiquity, and of no slender extent." And he illustrates this by the Grecian funerals of Homer; the funeral pyre of Hector; and by early records of the practice in various countries of Asia, in Rome itself, and in different countries of both Europe and Africa.

Touching the various modes of disposal of the dead, he says, "The Indian Brachmans thought it the noblest way to end their days in fire.

"The Chaldeans abhorred fire.

"The Egyptians objected to the merciless consuming of their bodies by fire, but preserved them, by precious embalmments, depositure in dry earths, or handsome enclosure in glasses.

"The Scythians, who swore by wind and sword, declined all interment, and made their graves in the air.

"The Ichthyophagi, or fish-eating nations about Egypt, afflicted the sea for their grave.

"The Chinese, without cremation of their bodies, made use of trees, and much burning, while they plant a pine tree by their grave.

"The Jews usually buried their dead, but occasionally admitted cremation, as when Jabesh burnt the body of Saul, and as was their practice in times of pestilence.

"The Christians have preferred the practice of the Patriarchs, returning their bodies, not to ashes, but to dust."

He then goes on to discuss the various customs in this respect of the successive inhabitants of England; and he concludes his learned and interesting treatise by saying, as to the hopes of Christians, and the comparative unimportance of the mode of sepulture,

“To subsist in lasting monuments, to live in their productions, . . . was large satisfaction unto old expectations. But all this is nothing in the metaphysicks of true belief. To live indeed is to be again ourselves, which being not only a hope, but an evidence in noble believers, 'tis all one to lie in St. Innocents' Churchyard, or in the sands of Egypt. Ready to be anything, in the ecstasy of being ever, and as content with six foot (of earth) as the *Moles* of Adrianus.”

But I must hurry on, and next very briefly call your attention to another of his great works, that which he styled *Pseudodoxia Epidemica*, or “Enquiries into many received tenets and presumed truths, which, examined, prove but vulgar and common errors.”

These “errors,” which he treats of in papers or treatises of various lengths, are very numerous, and for even a cursory knowledge of them I must refer you to the book itself.

To give you an idea of the subjects, I will only mention a few of the titles of the errors which he proceeds to refute:—

That crystal is nothing else but ice strongly
congealed,

That an elephant hath no joints,

That a pigeon hath no gall,

Of the Phoenix,

Of the Basilisk,

That a Salamander lives in the fire,

That an ostrich digesteth iron.

Or, to take another class of subjects—

That snails have no eyes,

Of the picture of Moses with horns,

That the forbidden fruit was an apple,

and so forth.

But though his tracts on these "vulgar errors" may, in many instances—and looked at by the light of our present knowledge (and we must never forget the immense difference in the scientific knowledge of the seventeenth and nineteenth centuries)—appear not only quaint, but almost trivial, yet even where the conclusion to the question discussed may appear to be self-evident, and the reasoning thrown away, we often see an amount of learning and research displayed which strikes us as quite remarkable. For example, in discussing the "vulgar error," *that the ostrich digesteth iron*, he quotes the following writers in reference to it:—Rhodiginus, Johannes Langius, Aristotle, Oppianus, Pliny, Cælian, Leo Africanus, Fernelius, Riolanus, Albertus Magnus, and Ulysses Aldrovandus—a list which may well make us stand astonished at the extent of his studies, and cause us to say of him, even in such small matters, "*Nihil tetigit quod non ornavit.*" It is almost needless to add that in this case Sir Thomas arrived at the common-sense conclusion that although ostriches may swallow iron they do not digest it.

His greatest works were undoubtedly those which I have already mentioned. But he wrote also a very noted book, entitled the *Garden of Cyrus*, in which he discussed learnedly, and often fancifully, numerous questions connected with the vegetable world. He reviewed the practice of Horticulture, and the arrangements of gardens even from the first garden mentioned—that of Eden in Paradise. He makes reference to the hanging gardens of Babylon; the classical gardens of the Hesperides and of Alcinous; and to the gardens and orchards, with their pools of water, of King Solomon. And he discusses the various forms

in which ancient gardens were presumably laid out—dwelling largely upon the quincuncial* arrangements probably adopted. The whole book teems also with allusions, showing his minute acquaintance with vegetable phenomena.

As to King Cyrus, he says, "All stories do look upon Cyrus as the splendid and regular planter."

Sir Thomas Browne also wrote *Some account of the tombs and monuments in the Cathedral Church of Norwich*; and many papers on the birds, and fishes, and vegetable life of Norfolk and other parts.† But I should indeed weary you, were I merely to enumerate to you the bare titles of the long list of tracts and papers which his fertile brain produced.

Amongst his *Letters*, those to his sons, which will be found in Wilkin's Edition of his works, are worthy of mention as illustrating the special bent of his mind, his wide range of thought, the peculiarity of his advice, and the strength of his family attachments.

The stilted and complimentary, as well as round-about, epistolary style of those days is well known. Thus, in writing to Mr. Evelyn, he begins: "Worthy Sir,—In obedience unto the commands of my noble friend, Mr. Paston, and the respects I owe unto so worthy a person as yourself," or again, addressing Dr. Merritt, he commences: "Most honoured Sir,—I take the boldness to salute you as a person of singular worth and learning, and whom I very much respect

* Quincunx—a square with a central object, as of five trees arranged

thus—
 * *
 *
 * *

† Since the above was written, an admirable volume has been published by Mr. T. Southwell, upon Browne's "Notes on the Natural History of Norfolk."

and honour," or again, "Honoured Sir,—I am sorry that I have had diversions of such necessity, as to hinder my more sudden salute since I received your last."

To his sons he writes many letters. In these he addresses his eldest son Edward as "Dear Sonne," or "Dear Sonne Edward;" but those to his younger son Thomas, always commenced "Honest Tom" or "Tom" only.

Much of his advice to "Honest Tom" is peculiar although essentially sound and practical. Thus he advises him, when a young man in France, in this fashion: "I would be glad you had a good handsome garb of your body, . . . and take up a commendable boldness, without which you will never be fit for anything." "Live soberly and temperately, the heat of the place (Xaintes) will otherwise mischief you, and keep within in the heat of the day." "You may stay your stomach with little pastrys some times in cold mornings, for I doubt sea larks will be too dear a collation and drawe too much wine down."

Again, later on, he writes: "Bee sober and complacent. If you quit periwigs it would be better, and more for your credit." "Hee that goes to warre must patiently submit unto the various accidents thereof." And that this "Honest Tom" was a worthy son and a fine English sailor we learn from a passage in another letter to him at a latter period, when a lieutenant of his Majesty's ship the "Marie Rose." He writes to his son: "Mr. Scudamore, your sober and learned chaplaine, in your voyage with Sir Jeremie Smith, gives you no small commendations for a sober, studious, courageous, and diligent person; that he had not met with any of the fleet like you, so civile, observing, and diligent to

your charge, with the reputation and love of all the shippe; and that without doubt you would make a famous man and a reputation to your country."

We can only regret that this promising son did not live to fulfil the high expectations formed of him.

Finally reference may be made to a *Letter*, because stated to have been previously unpublished, which may be found in the "Eastern Counties Collectanea," in which he exhaustively discusses the nature of a *large fish-bone* dug up at Cunnington, and which had been sent to him for his opinion upon it.

To sum up—Sir Kenelm Digby writes to Sir T. Browne, of the *Religio Medici* as "Your excellent piece, . . . of so weighty subjects, and so strongly penned."

Dr. Johnson says of him "There is no science of which he does not discover some skill; and scarce any kind of knowledge profane or sacred, obtruse or elegant, which he does not appear to have cultivated with success."

Carlyle says "The conclusion of the essay on urn burial is absolutely beautiful; a still elegiac mood, so soft, so solemn and tender, like the song of some departed saint flitting faint under the everlasting canopy of night—an echo of deepest meaning from the great and mighty nations of the dead. Browne must have been a good man."

Evelyn, as I have already quoted, writes of him as "That famous scholar and physician."

And to come nearer home, the late Captain Blakiston, in a paper read before the Archæological Institute, in Norwich, in 1847, writes of him as a "Great Antiquarian and eminent citizen; . . . a quaint and original thinker;" and as "Leaving behind him a shining reputation."

By general consent Sir Thomas Browne was recognised,

not only as a "curious thinker," but as a man of remarkable and original talent even in his lifetime, and the same reputation continued after his death. His works have always been regarded as those of a strong and original thinker, and they have never been held in higher estimation than at the present time. And I think I may fairly repeat that the more his writings are studied the more does their learning and power impress itself upon our understanding. With many faults, with many shortcomings—as judged by the standard of the present day—they yet remain the monument of genius, and worthy to be classed amongst the highest productions of great and cultivated intellects.

Norwich may be well proud of so great a citizen—of one whose memory is held in higher and yet higher esteem, and who is justly regarded as one of the greatest of her literary men.

Perhaps the only drawback to our satisfaction is the fact that he was not a native of Norwich. And in this sense we cannot claim him as our own, as we are proud to claim so many of our citizens, who have distinguished themselves in literature, in science, in botany, in departments of natural history, in medicine, and in painting. But Norwich can look upon him with pride as an adopted son, as one who elected to live the whole of his working life in this city; and who identified himself so absolutely with it, that his name is inseparable from it, and who will be known for all time as Sir Thomas Browne, of Norwich.

ADDENDUM.—On October 19th, 1905, the admirable statue by Mr. Henry Pegram of Sir Thomas Browne, erected in the Norwich Haymarket, was unveiled by Lord Avebury, in the presence of the Mayor and other city officials and of a numerous company. This date was the tercentenary of the birth of this great philosopher, and he was both born and died on the 19th October.

JARROLD & SONS, LTD.,
PRINTERS,
THE EMPIRE PRESS, NORWICH.

